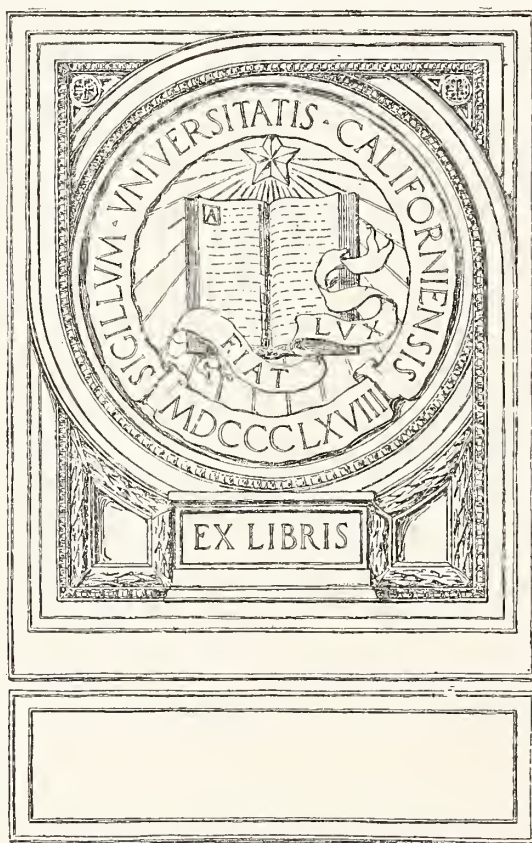



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Colorado Medicine

The Journal of the Colorado State
Medical Society

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1918

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Colorado Medicine

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Editorial Comment

WORK FOR THE NEW YEAR.

Life is continuous. When it ceases for an instant, it ceases forever. Lower forms have periods of suspended animation, may hibernate. But higher organisms do not hibernate. All this is true of a State Medical Society. If it is to live at all, it must live every day of the year; not merely by memories of the past or in anticipation of a meeting that is to come; but by work inspired by its purposes and directed to their accomplishment, that goes on day by day.

There have been successive steps in the organization of the medical profession, since seventy years ago representatives chiefly of colleges were called together to form the American Medical Association. But no step has been more important than the making of every member of a county or district medical society, by reason of such membership, fully and continuously a member of the State Medical Society. So that upon each of us rests at all times the duty to work for the objects and success of the organization.

The officers and committees of the State Society have specific duties laid upon them, particular interests confided to their care, that must be attended to from time to time if the year's life of the Society is to make a good showing at the annual meeting. But the larger professional interests represented are directly in the hands of each individual member. The upholding of professional ideals in practice; the attitude toward colleagues, a readiness to instruct and lead the community in all things related to the gen-

eral health, remain always duties that are not and cannot be assigned to any officer or committee.

Also the scientific work of the State Medical Society is chiefly lived from day to day in the minds of its individual members. The showing it makes in the program of the annual meeting rests directly on the way the members are thinking, and expressing or recording their thoughts from day to day. The amount that any county society will contribute to the state meeting is closely proportioned to the activity shown by its members, in keeping up its own meetings from month to month and from week to week. The memorable addresses made to us by famous physicians or surgeons from other states are mainly important in the inspiration, the stimulus they furnish to the daily scientific life of our members.

The address on cancer by the President-Elect of the American Medical Association brings before us, in true emphasis and sequence, the points to bear in mind in the consideration of each case that comes under our care—the points on which more recorded experiences are especially needed and which each of our cases, properly observed, can help to elucidate. Our personal observations and deductions, brought before our county society, and examined and tested by those colleagues who best know us, furnish the material for papers of real value that give us a right to the attention of a wider circle of hearers and readers. The daily observation and thought of our members are the foundation and most essential part of the whole structure of the year's scientific work which is recorded in **Colorado Medicine**. Chiefly because it keeps up the conscious-

ness of this daily life of the society, is our monthly journal so important.

The value of our annual social reunion and scientific meeting is not to be forgotten or underestimated. But such gatherings will attain their highest value only if from day to day, and month to month, the life of the society goes steadily on. If **Colorado Medicine** is well sustained, if the county societies are active and well attended, the annual meeting will be a notable and striking success this year.

The beauty of Estes Park in the second week in September, when the crowds of tourists have left but the fine weather reaches its culmination; and the accessibility of the place to the doctors' automobiles, each of which should bring its full load, will do their share toward making the 1918 meeting a memorable one. If many of our most active and honored members are absent in the fulfillment of military duty, the interest will be more than kept up by what others who have returned from the scenes of active operations have to tell. Then the new medical problems suddenly raised or pushed to the front by war conditions will demand our attention, interest and best efforts toward their solution. Let each member begin to think and plan for the coming meeting.

E. J.

TUBERCULOUS SOLDIERS.

The call to army service has disclosed many cases of tuberculosis which had previously remained unsuspected. Furthermore, many a man who entered the National Army in apparently perfect health will show signs of incipient tuberculosis from time to time, in precisely the same fashion as occurs in civil life. Already the military authorities and the civil organizations coordinated with them have notified the various state boards of health of large numbers of such cases. The Colorado State Board of Health has received a list of the names and addresses of a considerable number of men so affected, with an insistent request that these young men may at once receive proper medical attention. In this emergency the State Board of Health is entirely without

funds for undertaking the necessary work. The professional care of these young tuberculous soldiers will therefore in general have to be provided for by voluntary and gratuitous service on the part of those physicians of the state who remain in civil life.

In order to establish this work upon an organized basis, the State Board of Health, through its secretary, recently addressed to the president of each constituent medical society affiliated with the Colorado State Medical Society a letter requesting that the matter should be considered either at a regular meeting of the local society, or if necessary at a special meeting. It was suggested by the Board of Health that each constituent society might appoint three committees. The first of these would be a committee to provide for treatment, whose duties would be to consult with county commissioners or other public officials with a view to the provision of special funds for hospital or sanatorium treatment for patients who might need such treatment and were unable to defray the necessary expenses. A second committee, to be known as an advisory committee, would undertake to notify the rejected or returned tuberculous soldier of the steps necessary for obtaining professional advice; and would assign the patient to a given member of the committee for examination and instruction as to further care and treatment. To a third committee, to be known as the follow-up committee, would fall the duty of seeing that the advice given was carried out, and of reporting to the local society the progress which the patient was making.

There can be no question that the medical men of the state will undertake this added responsibility cheerfully and efficiently. It may occur to some to wonder why communities and states could not maintain, in war or peace, an equally strict supervision over the well being of every tuberculous man, woman, and child.

THE NEW AMERICAN JOURNAL OF OPHTHALMOLOGY.

The war has been responsible for the initiation or hastening of many radical changes

in the interest of efficiency. But perhaps none of them has been more sweeping of its kind than that which is this month being quietly put into effect with regard to the ophthalmological publications of the United States.

Journal consolidations are common incidents. In the European ophthalmological field, however, the war has almost certainly been the cause of two such changes. In Italy the *Annali di Ottalmologia* and the *Clinica Oculistica*, both of them important monthlies devoted to the eye, were a year ago combined to form one journal under a title which merely continued as one the two names of the previous publications. A year ago, also, in England three former periodical publications of the same order, the *Ophthalmoscope*, the *Ophthalmic Review*, and the *Royal London Ophthalmic Hospital Reports*, were amalgamated under the very satisfactory title of the *British Journal of Ophthalmology*.

This country has had for many years past a number of monthly or quarterly journals devoted to ophthalmology, each representing a great deal of self-denying work and financial loss on the part of those responsible for its maintenance; each receiving its particular share of support from among the eye men of the nation.

Stimulated, no doubt, by the European examples already mentioned, Dr. Edward Jackson, this year's president of the Colorado State Medical Society, and who has himself published for a number of years the "*Ophthalmic Year Book*" and "*Ophthalmic Literature*", was successful during the past year in setting on foot a movement for the consolidation of a number of these American ophthalmologic periodicals. The new "*American Journal of Ophthalmology*", which makes its introductory bow to the medical public in this month of January, 1918, replaces Alt's "*American Journal of Ophthalmology*", Parker's "*Annals of Ophthalmology*", Wood's "*Ophthalmic Record*", Würdemann's "*Ophthalmology*", and Jackson's own "*Ophthalmic Year Book*" and "*Ophthalmic Literature*", as well as the Mexican "*Analesde Oftalmologia*", published in Mexico City for eighteen years by

the eminent ophthalmologist Uribe y Troncoso.

The first ophthalmic journal published in America bore the same name as the new journal now first appearing. The original "*American Journal of Ophthalmology*" was published in New York by Dr. Julius Homberger in July, 1862. Its existence was brief, terminating in January, 1864. The only other ophthalmic journals published in 1862 were the French "*Annales d'Oculistique*", then twenty-four years old; the German "*Graefe's Archiv für Ophthalmologie*", which had existed for eight years, and "*Klinische Monatsblätter für Augenheilkunde*", which began publication in 1862; the English "*Royal London Ophthalmic Hospital Reports*", then five years old, and "*Ophthalmic Review*", the first of that name, which began publication in 1862 and lasted four years; and the Dutch "*Reports of the Netherlands Hospital for Eye Patients*", which had existed since 1858. In 1862 no ophthalmological society existed in America, and no American medical college had a special teacher of ophthalmology.

The "*American Journal of Ophthalmology*" which now merges its existence into that of the new journal has been published since 1884.

There are now in America six or seven thousand physicians whose practice is especially devoted to diseases of the eye. The unified facilities afforded by the new *American Journal of Ophthalmology* should offer to these ophthalmologists the most efficient and also the most economical means of keeping in touch with the eye literature of their own and of other countries. Dr. Edward Jackson is the editor of the new journal.

WAR RATIONS IN GERMANY.

The allied blockade on the one hand, and the submarine campaign on the other, in the presence of the general military stalemate, have given to the struggle in Europe largely the aspect of a war of starvation. Many optimistic opponents of Germany have somewhat too readily believed at any time in the past two years that the German people were almost starved into submission. Undoubt-

edly the diet of the common people in Germany and Austria for the past year or two has scarcely been a luxurious or a well balanced one. At the same time it is extremely unlikely that hunger can be relied upon to bring Germany to her knees, however much the hardships of a bare subsistence diet may add to the impatience and discouragement associated with military defeat.

A separate peace with Russia may greatly alter the condition of stress as regards food rations under which the German people have existed for a considerable part of the duration of the war. But the German medical literature of the past year has furnished steadily increasing evidence of the influence of the war ration upon the normal and diseased organism. The war diet is not so much to be thought of as a definite type of nourishment, but rather a reduced supply in calories and a change in the balance of the different elements required for nutrition. Most of the writers frankly admit that the standards of nourishment are not what they should be. "It cannot be denied", says Rosenfeld (*Berliner klinische Wochenschrift*, number 28, 1917) "that the starvation war has changed the physiognomy of the German people in no inconsiderable degree. A large part of the population show a deterioration in their appearance."

Not merely have the kinds of food obtainable been changed so that substitutes play a role of steadily increasing importance, but there is also an actual minus as to quantity, especially of fat and albumin. The amount of albumin which was at the disposal of the German people was recently given as an average of forty-five grams per individual per day. Such a reduction below standard derived increased significance from the fact that it was not compensated for by a surplus of carbohydrate and fat. Grumme (*Berliner klinische Wochenschrift*, number 32, 1917), who calculates the available daily quantity of food substances as albumin forty-five grams, carbohydrate five hundred grams, and fat ten grams, or a combined calory content of twenty-four hundred to twenty-five hundred, declares that the problem of war nourishment is one of al-

bumin. Lack of fat can be overcome with the surplus of carbohydrate.

What especially awakens Grumme's concern in regard to the reduced supply of albumin is the results obtained with a series of experiments on animals undernourished with albumin. Thus it was found that while eighty-five to ninety per cent of the eggs from normally nourished geese were fertile, the corresponding percentage in geese kept upon a diet deficient in albumin was only ten to fifteen. At the same time the general condition of the geese was lowered, especially their ability to withstand weather changes. Grumme also mentions as significant cases in which the breast milk of women dried up entirely in the first week or two after the birth of the child, this deficiency being related by him to a disproportion between the amount of albumin consumed by the mother and the increased demands made upon her system for nutrition of the child.

AMERICA'S HISTORY OF MEDICINE.

With the making of books on medical subjects there are usually associated, at least so far as the authors are concerned, much labor and little profit of the direct financial kind. Some medical books doubtless owe their existence to a mere love of publicity or a desire for self-advertisement; others again to that "cacoethes scribendi" or itch for handling the pen of which wrote Juvenal, himself a victim of the habit; some to the delicate flattery conveyed by a direct request from the publishers; a few perhaps to a pure love of imparting knowledge.

It would be idle and ungracious to speculate as to which influences contributed most to the writing of Garrison's *History of Medicine**. Surely the love of writing played a large and honorable part, for the book is distinctly characterized by an affection (as well as the ability) for fine phrasing. And no intellectual reader could study the volume without feeling throughout that the author had great joy in his task and in his topic.

That "the reception of the first edition of this book by the medical profession has been

*W. B. Saunders Company, Philadelphia.

most kind" is fairly well indicated by the fact that, published in 1913, it had to be reprinted in 1914, and has been revised, entirely reset, reprinted, and recopyrighted for the present edition. It brought forth complimentary letters from such men as William Osler and the late Weir Mitchell, as well as from Sudhoff of Leipzig and Neuburger of Vienna, although the last named, speaking during the war, complains that the writer "sees things through English spectacles"; an accusation which Garrison gently refutes, remarking moreover that to view everything with "the equal eye of Nature" cannot be claimed for the contents of any single human calvarium.

Among the additional sources relating to medical history which have been drawn upon to add to the thoroughness of the second edition, Garrison mentions the researches of Rohde, Höfler, and Wellmann in ancient medicine, of Sudhoff, Neuburger, Husemann, Wickersheimer and Singer in medieval medicine, of Sticker in epidemiology, of Tschirch and Schelenz in pharmacy, of Ebstein in diseases and diagnosis, of Heidel on Greek corpuscular theories, of Curtis on Harvey, and Streeter on the Florentine artist-anatomists of the Quattrocento, as well as of several recent writers on the valuable findings with regard to Egyptian, Babylonian, and Cretan medical history.

A modern "history of medicine" cannot be original in the sense applied to some other forms of literature. It must be in large part a compilation of isolated facts obtained from a variety of distinct sources. Yet while Garrison's history is for its size perhaps the most thorough compilation of facts with regard to medical history which the world has yet seen, it does not greet the reader as a mere catalogue of dry-as-dust details industriously strung together, but as a living narrative in picturesque and fascinating style, which abounds in humorous perceptions, in wide historical and scientific grasp, and in keen human and philosophic insight. It is possible for the individual who has been educated in medical science to open the volume at any point and fall to reading it with relish and with sustained but not laborious attention. In the matter of

medical portraiture, the volume is more liberally and more clearly illustrated than any other work of the kind.

For the new edition the interesting final chapter on "Cultural and Social Aspects of Modern Medicine" has received a supplement, not an important part of the book as a whole, but revealing the author as one who thinks deeply in regard to the intricate problems of our social and economic existence. For example: "Much as the friends of our common humanity may aspire toward . . . a Universal Peace, the constant shiftings and migrations of peoples about the surface of the globe, the impermanence of national alliances . . . , the fact that democracy is not . . . an absolute form of government but an education of the people for citizenship, the actual existence in nature of peaceful and warlike (or predatory) races side by side, the commercial rivalries of nations and the hatred of the "have-nots" for the "haves", make the immediate future of humanity extremely dubious."

WHAT CAN IT BE?

A certain medical journal once edited from Denver, but whose editorial office has of late been banished to a state which is reputed to be the happy hunting ground of the would-be divorced, still finds its favorite pastime in abusing the official journal of our great national medical organization. Each of us, of course, is usually entitled to the privilege of amusing himself in any way that does not injure other people. It is however a matter of keen regret to some of those who do not scruple to be regarded as orthodox members of their county, state, and national medical organizations, that several otherwise most estimable and capable fellow members of those organizations, who are not commonly regarded as placing themselves in opposition to the existing order of things official, still allow their names to appear month by month upon the list of editorial collaborators of the Nevada publication. Are these gentlemen supporting the institutions in which they believe?

SEND US REPORTS OF YOUR INTERESTING CASES.

Like many other civil activities, the writing of medical papers has markedly diminished during the course of the great war. While many medical men have been devoting their entire energies to military service, those still engaged in civil practice find their time more fully occupied by the work thrown upon their shoulders in consequence of the absence of their colleagues; or if time is still available, the mental unrest induced by the turmoil of war is scarcely favorable to the literary spirit.

We all, however, have occasion to observe from time to time cases of rare or special interest the publication of which would be of benefit to ourselves and to the medical fraternity at large. The writing of a case history in a relatively informal way from one's office record does not involve any particular effort or a great deal of time. There must be a great many extremely interesting and instructive cases the knowledge of which remains forever limited to the practitioner or practitioners in immediate charge of them. Why not keep up your interest and that of others in medical science by sending as often as possible brief and simple records of such cases to **Colorado Medicine**. The editor will especially welcome such contributions, publishing them under the section "Original Articles".

Ruling on Promotion of Lieutenant in the Medical Corps: "Several questions have arisen as to promotion of first lieutenants of the Army Medical Corps. One of them is whether, under the act of May 18, 1917, vacancies in that corps, by reason of the requirement that first lieutenants of the corps shall not become entitled to promotion until they have served a period of years, can be filled by temporary appointment of lieutenants now in the corps. The act of October 6, 1917, provided that, during the existing emergency, first lieutenants in the Medical Corps of the regular army and national guard shall be eligible to promotion to the rank of captain, upon such examination as may be prescribed by the Secretary of War. Thus the bar to promotion of first lieutenants having been removed, those that qualify on examination may be advanced to the grade of captain to fill the permanent and temporary vacancies therein, and they may be advanced to the grade of major as vacancies occur therein, and such vacancies as may exist in the grades as a result of temporary advancements may be filled by temporary appointments."—New York Medical Journal.

Original Articles

ON THE FORECASTING OF COMMUNITY DISEASES*.

HENRY SEWALL, M.D., DENVER.

I give you a parable. A city approaching 300,000 population has a large and active criminal element. For the control of vice the taxpayers support bureaux of police and detectives and a very large force of underpaid patrolmen and plain clothes men. Discipline in this body is conspicuous by its absence. True, major crimes, murder and grand larceny, are reported to the central office with a fair degree of dispatch. But all minor offenses are condoned or censured by the individual officers as a private court or reported to headquarters at their convenience only when law abiding people protest that the prevalence of criminal episodes makes life intolerable. Except within the narrow scope of major crimes, police headquarters is not in touch with its force of employees. They neither make reports nor receive orders nor does one officer know what troubles prevail within the jurisdiction of another. At the end of each week the bureau of police gives to the public a statistical survey of major crimes culminating during the previous seven days. Concerning this class of derelictions the forces of the law make praiseworthy efforts to detect the criminal and to punish the crime, but little or no attention is paid to the moulding of public opinion, to the creation of an atmosphere of right-doing which would make difficult the germination of the seeds of vice.

Granting the existence of a community governed as I have represented, is it not obvious that it soon must become a hotbed of penal disorders?

Though the parable is done, it concerns us intimately.

For police and detective headquarters read Bureau of Health. For criminals read pathogenic germs and unsanitary conditions. For policemen and detectives read prac-

*Read before the Medical Society of the City and County of Denver, November 20, 1917.

tiating physicians, and the analogy is sufficiently close today and a few years back it would have been almost exact.

Admitting provisionally that my parable is justified, it behooves us to enquire into the organization of our public health service, to try and detect its elements of weakness in the light of experience developed in the history of the most perfectly working organizations having to do with health, criminology and sociology and, finally, to suggest constructive changes designed to develop a perfect mechanism. It is obvious that a worthy analysis of the extensive problem would far transcend the limits of a fugitive paper like this; but I have felt that the time is ripe to offer a few practical suggestions whose adoption could not but make for an efficiency of health administration which would redound to our benefit and to that of the public at large.

As in clinical medicine our remedies may be divided into two broad classes, those having influence on underlying and remote vital conditions and those meeting the urgent immediate indications of the moment, so in the treatment of the sanitary problem we must consider the more or less theoretical views of the ideal structure of the public health organization apart from the operations of the machinery now in existence.

In regard to the personnel and organization of the Health Department, I will dogmatically venture the opinion that the highest efficiency of administration cannot be expected until all operations having to do with public health are under complete control of a trained and competent sanitarian.

A general medical education by no means fits an incumbent for this office.

Already a few institutions of learning are seeking to qualify candidates for distinctively sanitary work, graduating them with the degree of Doctor of Public Health.

We look with eager anticipations to the development of the new Institute of Preventive Medicine which has been founded by the prince of philanthropy in connection with the Johns Hopkins University.

No one familiar with the glorious history of our National Public Health Service will

ask for demonstration of the necessity for special technical training in Sanitation.

The prediction is justified that in the near future it will be considered just as barbarous to submit the protection of public health to the care of one not specially trained in the work as it would be now to trust the treatment of sick people to one lacking a medical education.

The Bureau of Health which I have in mind will stand forth in the eyes of all people as far and away the most important and remunerative of all the branches of civic government. Its operations must be strengthened with the "sinews of war". A niggardly appropriation in the budget would awake a popular protest because from the very primary grades of the schools citizens will have been educated to believe that "the Health of the People is the Supreme Law". Officials in the bureau of health should be sure of their positions during competency. The salaries must be adequate to attract men and women of the needed acquirements.

For a long time to come, probably, it would be expedient that the head of the health department should be a skilled administrator rather than a technical sanitarian, but he should be guided in the field of hygiene by highly trained assistants on permanent tenure, the organization being operated somewhat after the pattern of the departments of the central government.

The objection is obvious that the scheme here proposed is utopian and wholly unpractical. Such an adverse critic should be shown the history of our own health department through the past quarter century. Vastly more for the public welfare has been accomplished, relatively, than is here demanded.

The prime necessity for upward evolution is public education, and we practitioners of medicine compose the faculty who must furnish the instruction for good or ill. With a little devotion on our part laymen will soon discover for themselves all the truths we could predicate in advance.

It must be admitted that, though we may look for an early dawn in the organization of sanitary efficiency, up to the present the number of trained sanitarians in this coun-

try is wholly inadequate to supply local needs.

Having disposed of the more remote problem of sanitary organization, there remains to consider the practical working of the Health Department as it now exists, and whether and how reasonable suggestions for its improvement can be made.

It may be said in advance that anyone who assumes from the foregoing that the Health Department of Denver has not held its own in the procession of civic progress is without knowledge of facts. It was in 1891 that for the first time any respectable authority was given the health department in the scheme of civic government. This was during the mayoralty of Platt Rogers, with the late Dr. Henry K. Steele as Commissioner of Health, assisted by that energy-charged wire the late W. P. Mumm. The writer was the other assistant commissioner and can testify to the splendid advances in sanitary administration which have been accomplished from that day to this.

No more trenchant evidence of the wonderful progress of applied sanitary science could be presented than by a statement in parallel columns of the morbidity and mortality from diphtheria and typhoid fever in 1891 and in 1916.

The changes that have been realized have not come by chance but have been wrought by conscious, systematic effort, and in this fine victory the health department has been the aggressive but unassuming leader.

It is greatly to the credit of our medical fraternity that the health officials it has furnished, who could not possibly have been fitted by technical training, who have been appointed to position chiefly by personal predilection of the Mayor, and who have been given wholly inadequate financial support, still have turned out to be on the whole a line of honest, able and devoted humanitarians quick to adopt and apply the technique of scientific hygiene. Two great additions to the armamentarium of the department should be noted. One was the hospital for contagious diseases, initiated as a single humble cottage by Dr. Steele; the other was the establishment of a scientific laboratory when Dr. L. E. Lemen invited Colonel La

Garde, of the Medical Corps of the Army, to examine throat cultures for the germ of diphtheria.

Both of these acquisitions were of inestimable advantage to the public.

Both deserve and would well repay a far richer support than they receive at present.

It is important for us, who deem ourselves devoid of official responsibilities, to realize the position of the Health Commissioner in a community.

There is hardly a step which he can take in the furtherance of his duty to accomplish the greatest good for the greatest number, but he must tread upon the sensitive toes of someone who blocks the way. Now it is the doctor, now the layman who is inconvenienced and the fight must be started, carried on and finished by the health official unaided. He is opposed in life and rarely gets the wreath of commendation after death.

The whole crux of my argument is that we, the medical profession, are, nolens volens, unsalaried members of the department of public health.

Its successful administration is not possible without our aid. There is no betterment which accrues to it but will yield to us and to the community emoluments vastly transcending the cost in energy and money. It is this point of view which has encouraged me to make a single practical suggestion in conclusion.

My plea is for a more intimate, more cordial and more frequent coöperation between the medical profession and the health department. We all value and profit by the weekly reports of our civic status regarding diphtheria, typhoid fever and the eruptive contagions as printed in the Bulletin of this Society. But why stop there? By far the most numerous disorders that engage the general practitioner receive no systematic attention in the Bulletin because the health office has no data from which to make a report.

The average practitioner who sees in one day three new cases of an infection with similar symptoms is justified in thinking he is witnessing an excerpt from an epidemic. Early information of the facts conveyed to

his colleagues would put them on their guard and facilitate their diagnosis.

From one or more of our clinical laboratories information would quickly come as to the pathology of the disorder, and inevitably plans for prophylaxis and schemes of treatment would be suggested. We want to know our patient's disease when we see him. How often must we look back on a lost battle with the painful thought that we might save the patient could we but have another chance. Pathogenic organisms are continually shifting their virulence and form of attack; to meet them successfully we must, like the commander of a fighting army, know momentarily the movements of the enemy. How few among us, for example, would be likely to recognize early a case of poliomyelitis unless forewarned of the probability of its occurrence. It is time we were in position to know day by day the sanitary and epidemiologic status of our community. Statistical reviews and learned discussions after the end of an epidemic have their value, but they are too late to influence the conflict when the sick man needs a friend. Our various medical societies are of great value as forums of information. But cases formally reported are closed issues and for the most part tend only to portray some clear cut picture of pathology or successful diagnosis and treatment. What we want especially is to get the first murmurings of a threatened calamity before the danger is upon us. To this end the central Bureau of Health must have immediate information of every outcrop of infectious disease, and to secure reliable reports all trained observers of the sick must coöperate with the health department.

Among the most important agents of information are the Medical Inspectors of Schools. Hence the necessity of choosing for this responsible office physicians of adequate training, which can only be done by offering reasonable compensation for the service.

Another source of information would be the Visiting Nurses' Association.

The general hospitals of the city, and especially the County Physicians would no

doubt often have important data to transmit.

But above all the general practitioner of medicine must be relied upon to keep the bureau of health informed of the clinical condition of the community. If each physician would cultivate the habit of regularly reporting to the health office every contagious case and every condition leading to contagion coming under his observation, the central bureau would constantly have on hand an exact catalogue of the kinds and distribution of infections invading the community.

For the information of the profession the Manager of Health should add to the vital statistics already published in the weekly Bulletin of the Society a synopsis of the reports on the epidemiologic situation, and as far as possible a forecast of events for the near future, much as in a meteorological bureau the data from numerous scattered observers are combined to forecast local weather conditions. It would seem wise that a special editor should be appointed to conduct a page of the Bulletin devoted to public health, and this office should be honored as one requiring extraordinary talent for its administration and a potentiality for great good to the profession and the community.

It has taken far longer than was anticipated to express the idea which initiated these remarks.

The speaker hopes that the thought is clear and that it will start a train of reflection which may culminate in a long step forward in the service of public health.

434 Majestic Building.

IMAGINATION AND MEDICINE.*

JOHN INGLIS, M. D., DENVER.

Medicine is not one of the pure sciences; it is a composite science.

Medicine as a science is the superstructure of anatomy, physiology, chemistry, pathology, psychology, hygiene and their cognate studies.

It is only upon a well laid foundation of these composites that medicine has any

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

claim to lay a scientific superstructure. For years medicine was empiric. Today the pendulum has swung to the other extreme. Pathological methods aiming at exact diagnosis are given the preference over those seeking a cure, as if the main point were to satisfy the curiosity of the physician.

Psychology, the study of the normal mind, has not been given the consideration its importance demands. The lack of knowledge in this respect on the part of the physician often plays into the hands of the charlatan or the Christian Scientist. No physician should fail to recognize how much the body depends upon the mind.

Psychology bears the same relation to the diseased mind that physiology bears to pathology. We can only know the diseased body by knowing the body physiologically. It is as impossible to know the diseased system without knowing psychology as it is to know surgery without knowing anatomy. We speak frequently of imagination and pass it by as of no consequence. Of the patient, how often we hear the physician say, "Oh, that's her imagination", forgetful of the fact that that is as important as "Oh, that's an appendicitis", or, "Oh, that's pneumonia".

What is imagination? It is the representative function of the human mind, the function which takes the acquisitions of the memory and association and works them up into mental images. It is well for physicians especially to remember that the imagination never creates. It works solely and alone on ideas already received. The material of imagination is supplied only by what ideas the mind has acquired. There is a certain play of the imagination from the mind of the most untutored to that of the philosopher which is known as passive imagination. We find its simplest form in dream consciousness. Here the flow of ideas is irrelevant, without selection or combination due to the will. But a man ignorant of astronomy cannot possibly dream of the sun's parallax, What patient dreams is not always to be overlooked. James says:

"Sensations once experienced modify the nervous organism so that copies of them

arise again in the mind after the original outward stimulus is gone."

A man born blind can never have a mental vision, nor can a man born deaf ever have a sensation of sound. Passive imagination breaks up the complex elements of experience into new products.

If it did not, imagination would not differ from memory itself. There would be a burdensome sameness to our mental life. Passive imagination is governed by the laws of association. Imagination works on the material of association. So far as we are concerned with the imagination of a patient, it is with his passive imagination gradually working into a persistent active imagination along some particular line.

A rule every physician should lay down for himself is this: "The man or woman, who thinks that he or she is sick is sick."

No physician has any right to attribute a complaint to the imagination until he has exhausted every physical means of detecting a possible lesion. By way of illustration:

My attention was directed to preparation of this paper by having referred to me a case that had been the rounds of the best men in three eastern medical centres. This was a young woman of thirty years whose imagination played constantly on the advantages to her home of having a child, but who shrank from the reality, because physically "too weak". She had no pain, no physical sensation except weakness. She had gone from one of these places to another and had been diagnosed as a "neurasthenic". I kept her under observation for some time working on the basis which I take for myself: "A neurasthenic is a patient the cause of whose trouble I have not found out".

Without one symptom that ever pointed to her abdomen I had it x-rayed and found a long tubular stomach, the end of which lay on the bottom of the pelvis. She went home, had a gastro-enterostomy performed, her "weakness" disappeared and she is a perfectly normal mother, a child having been born. This case illustrates what too often passes for imaginary disease.

From even this kind of imagination we

must distinguish the scientific on the one hand and the esthetic on the other.

The scientific imagination is the John the Baptist of all great scientific discoveries. It builds on what the mind has acquired previously. The scientific imagination covers the entire data of the scientific branch in hand. It is familiar with the principles and laws of the science on which it expands. It is for this reason that in medicine all great scientific discoveries are made by men of imagination. Wonder is usually the precedent. Lord Lister, walking through the wards of a London Hospital, drew the attention of a dozen students with him to the fact that a wound which broke the skin was much more to be dreaded than even a severer wound with the skin intact. "Gentlemen," he said, "I have wondered at this for years and the man whose imagination can solve that problem will make one of the greatest discoveries in medicine." Lord Lister had the scientific imagination when he wondered about the two classes of wounds and it was he himself who solved the problem. When Ehrlich was working on "606" he was being driven by a powerful scientific imagination which had conceived the idea of forming a great germicide, which injected into the blood would sterilize the human body.

The scientific imagination is occupied solely with the discovery of new truths. It is for this reason that we look only to men of scientific attainment for the discovery of new facts. The daily papers announce with glowing headlines the discovery of some new serum or new remedy that is to abolish some dread disease, but every man versed in scientific training knows that such discoveries come only to men who are patiently following scientific paths and not to the man whose imagination is seeking notoriety or wealth. The scientific imagination is the genius of science. It is constructive. It is from men of such imagination that we get our hypotheses. Neptune was discovered by an astronomer whose imagination insisted that some such planet must exist in order to account for certain effects on Uranus.

The beginning of all discovery, medical

as well as geographic or otherwise, is a conjecture, a supposition, which the scientific imagination works out into a completed fact. The great need of medicine today is for men of imagination, a scientific imagination able to solve the great problems of pathology; men whose imaginations, like Lister and his wound, dwell on some of the great facts that need to be solved.

Why, when a pyloric ulcer heals, does it heal by contraction of tissue and not by restoration to normal lumen? Nature creates a gall stone—in the present state of our knowledge we can do nothing but take it out. There is a knowledge of physiological and pathological chemistry which, if we possessed it, would enable us to reverse the process. Birth should be a normal physiological process. It is instead today among civilized women too often a tragedy. These are problems to be solved by the scientific imagination, but we must not forget that even the scientific imagination works these problems out only on the data of acquired facts.

It should be mentioned in passing that men who possess the scientific imagination are practically always men of intellectual soberness and invariably unemotional. They possess the constructive mind. It is from such minds that we get our hypotheses, as Sir Michael Foster says: "It is in the putting forth of the hypothesis that the true man of science shows the creative power."

Such imagination had Bernard and "the response which in his youth found expression in verse, in his maturer and trained mind took the form of scientific hypothesis". Dr. Eliot tells us that the imagination of Darwin or Pasteur is as high and productive a form of imagination as that of Dante or Shakespeare. The esthetic imagination differs from the scientific in that the end sought is beauty instead of knowledge. Many a false philosophy has had its inception in the esthetic imagination.

Men and women who possess the esthetic imagination are usually those who are of strong emotional temperaments and deficient in practical judgments.

We must note that which so often concerns the physician in dealing with his pa-

tients, i. e., his patient's fancy. Fancy is the combining function of passive imagination. The ordinary restraints of thought are wanting in fancy. We speak of people imagining they have certain diseases. This is not a correct term—they fancy, not imagine. A child who has once been sickened on strawberry jam imagines he cannot eat it. But the real reason is the association of the jam with his former condition. Many idiosyncrasies of patients are in reality associations with former experiences. Break the association by changing the name or altering the form of the drug and the idiosyncrasy disappears.

Diseases of the imagination form a large category of illnesses. The physician who has not learned to minister to the imagination of the human mind has mastered only half his art. In a visit to Crile's clinic a year ago, I was struck with the very practical nature of his psychology, the effort constantly made to relieve the mind of the patient. Much of his effort to lessen shock is a study in psychology. His mastery of this phase of his profession has much to do with the success of his clinic. An old physician for whom I entertain the highest regard used to say: "It is as much the doctor's business to relieve anxiety as it is to cure disease." A patient comes down with a high fever, a headache and difficult breathing. By association, his imagination constructs for him a case of pneumonia. He suffers fully as much from his mental condition as he does from his cold. It is the duty of his physician in such a case to dispel the fear which is imaginary and not leave him or his family under the impression that he is threatened with pneumonia. As a matter of fact a patient is never "threatened" with a disease. He either has it, or hasn't it. Disease is a prolific cause of stimulating the imagination. Every physician knows how much attention to any given organ will stimulate or in some cases impair its function.

A patient of mine heard that pregnancy caused an increased flow of saliva. The next week she missed a monthly period and immediately began to have such a salivation that I finally resorted to atropia to check

it. Even this would not stop the flow when she began to think of it. She was finally relieved by the assurance that she was not pregnant and cured by mental suggestion.

A woman nursed her father who died of nephritis. Shortly after his death, she began to bring me samples of her urine. She would look at her ankles and tell me they were swollen to twice their size; she lost her appetite, lost weight, and developed a morning headache. Repeated urinalyses showed normal urine. She was finally relieved by suggestion.

Popular imagination associates the practice of medicine with mystery. It is this appeal to mystery that is the invariable accompaniment of every fake system of healing. Yet there is a grain of truth in every false system.

It is the duty of the physician to make use of every truth that will aid in the battle against disease, no matter where the kernel may originate. The great therapeutic power of suggestion is invariably the one grain of truth and is responsible for every so-called cure performed, from the electropath to the Eddy healer.

But it must not be forgotten that a cure by suggestion is as real as a cure by surgery. As a distinguished clergyman has said, "Christian science is a real cure for imaginary disease and an imaginary cure for real disease."

Every new remedy nowadays has to pass through the trial of having its virtue attributed to suggestion. In this way, suggestive therapeutics is an obstruction to be met with in the introduction of new means.

A very distinguished American physician only a few years ago attributed the good results of typhoid vaccination in the British army in India to suggestion only. But typhoid vaccine has lived down the obliquity.

That nervous and imaginary diseases are on the increase, there can be no doubt. The endless variety of modern competition not only in business, but in social life as well; the noises of street and factory, and the honk of the auto in the mountain dell; and the present indulgence in too much and too highly complicated table dishes are certain-

ly making a race of nervous dyspeptics and worried minds.

The modern physician must find some way of ministering to these people. It is often a case of ministering more to a diseased mind than to a diseased body.

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DISCUSSION.

A. A. Blackman, Colorado Springs: I am sure that if I say amen to Dr. Inglis' paper I shall be saying all I ought to say. However, I am tempted to make two or three remarks since I have the opportunity to do so. I think it is well to bear in mind that a diseased imagination is not an imaginary disease. William James says: "No mental modification ever occurs which is not accompanied or followed by bodily change". That is a broad statement to make, and in a limited experience I do not know where to draw the line. I have taken up, for the past eight or nine years, the practice of psychotherapy, and I am surprised every day at the cases that come under my observation that are curable by suggestion—cases that other men have thought were organic. Whether their trouble was organic or not, they have gotten well by simple suggestion. However, I always feel that psychotherapy is, at least, a bonus; after everything else has been done that our good sense tells us to do, suggestion is never out of place (often all-sufficient), and, if it is used by a regular physician, I believe it can do no harm. I think only a regular physician ought to use it.

THE AUTOGENOUS VACCINE IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

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Mark Twain once said: "It is a difference of opinion that makes a horse race." It might with equal truth be said that difference of opinion not infrequently leads us to newer fields of therapy. This I believe to be particularly applicable to the treatment of pulmonary tuberculosis, in as much as we have so many factors to contend with; not only in the varied manifestations of the disease, but equally so in the individual characteristics of the patient; and it is very frequent indeed that the line of treatment adopted for one case is contraindicated in the next.

Modern methods of treating tuberculosis may be said to date from the time of Dr. Herman Brehmer, to whom is due the credit for the initiation of the Sanatorium idea. In 1859 he established at Goebersdorf, in Prussian Silesia, the first Sanatorium to be con-

ducted along the lines of treatment still considered the basic principle, both in private practice and Sanatorium care.

Of Brehmer's work, Trudeau says: "For the first fifteen years his teachings made but little impression, but during the following twenty years the open air treatment, whether in or outside of a sanatorium, whether under favorable or unfavorable climatic conditions, has been generally accepted and gradually adopted all over the world as giving the best results in the management of all forms of tuberculosis."

Aside from the open air treatment, so called with the hours of prolonged rest out of doors, the plentiful supply of nourishing, easily digested food, and the daily life carefully regulated from the standpoint of physical exertion, nervous excitement or worry, no line of specific therapy has been evolved that has proven more than an adjunct to the theories as originally evolved by Brehmer; even though there has been discarded his idea of the specific quality possessed by the air in certain regions.

Thus far specific therapy has been the ignis fatuus of tuberculosis treatment. In 1890 Robert Koch announced the discovery in tuberculin of a cure for tuberculosis. The announcement was received with world-wide enthusiasm, and patients and physicians flocked to Berlin to avail themselves of its curative properties or to study its therapy. Almost a delirium seemed to follow the announcement, and Koch's recommendation of the type of cases in which it would prove of value was disregarded; deaths by the hundred, directly traceable to the use of the tuberculin, followed, before a saner point of view was reached; then followed the inevitable reaction, and a wave of disbelief in its specific action. In time careful studies proved Koch's contention for its use in selected cases, and today, in the hands of the phthisiologist it is a safe remedy for selected cases.

The advent of a pulmonary tuberculosis may be primary, or it may come secondary to an infection exhibiting one or more of the bacterias found in the mixed infections. A neglected cold, accompanied by an invasion of the lungs may be due to the influenza

bacillus, or to the pneumococcus, and their action upon the tissues may be so injurious that the tubercle bacillus is easily able to find lodgment. Measles and whooping cough not infrequently predispose to glandular involvement, and the concomitant train of symptoms.

The course of pulmonary tuberculosis is so varied in its manifestations that the line of demarcation between its several stages is seldom clearly defined. These stages pass almost imperceptibly into one another; occasionally marked by symptoms that are of not unusual import; a brief rise of temperature, an occasional night sweat, a slow but fairly definite and regular lowering of the body weight; a slight increase in the expectoration; a change in the color or consistency; an occasional slight hemorrhage, that alarms for the moment; these and numerous other symptoms intervene from time to time, and unless the patient is under watchful supervision, they are so slight as to fail to serve as a danger signal.

Many divergent opinions are held at the present time as to the influence of the mixed infections upon the course of a tuberculosis. That not a few of the organisms isolated from the sputum are of low vitality is undisputed, and it is probably equally true that the action they play in the toxic condition of the patient is a subsidiary one. This may be literally true of some, but not of all; in as much as it is not infrequent that more than one or two organisms may be obtained on the initial growth, it is quite probable that only one of these will be virulent, or active in its toxic manifestations at this time; it remains possible, however, that these other dormant organisms can, under favorable conditions, become active.

The adherents to the theory that the tubercle bacillus, and it only, is responsible for the fever, wasting, caseation and softening processes of the disease, claim that the mixed infection organisms have no true toxicity, while others maintain that if a tuberculous process does not have implanted on it the organisms of a secondary infection the tuberculosis will scarcely be apparent.

Powell and Hartley state: "For ourselves, we cannot but believe that when such micro-

organisms are present their action must be harmful, and that they at least prepare the way for the invasion of the tissues by the tubercle bacillus, and assist in that suppurative process which leads to the elimination of caseous products, and manifests itself clinically by the well known phenomena of hectic. The matter requires further investigation, but for the present we cannot ignore the part played by secondary micro-organisms, and must do all in our power to prevent their gaining access to the patient."

Allen states: "Naegli has found in 96 per cent of autopsies conducted upon bodies between the ages of 18 and 30 years, evidence of tuberculous infection was present; while in those above 30 none were found free. Infection by the tubercle bacillus is thus a practically universal occurrence, but in only a relatively small proportion of the cases do active pulmonary symptoms supervene. All the physical signs producible by the bacillus tuberculosis, plus a concomitant infection, with the single exception, perhaps, of cavitation, may be produced by a perfectly pure infection by the bacillus tuberculosis; but none the less is it true in the great majority of instances, that by far the greater proportion of physical signs which most clinicians would assign to the action of the bacillus tuberculosis, are in reality due to the other micro-organisms present".

Thus, either the tubercle bacillus, or some one or more of the allied invaders may initiate changes in the lung tissues that give rise to symptoms practically identical. In chronic, advanced pulmonary tuberculosis the clinical signs of activity may be almost entirely due to the secondary organisms, and the selection of the dominant, exciting organism from which to manufacture the vaccine, and a course of treatment carried out for a period of several weeks, or for a few months will in the great majority of such cases give marked relief and oftentimes change a doubtful or even hopeless prognosis to a hopeful one.

Wright defines bacterial vaccines as "sterilized and enumerated suspensions of bacteria which furnish, when they dissolve in the body, substances which stimulate the healthy tissues to a production of specific,

bacteriotropic substances, which fasten upon and directly, or indirectly, contribute to the destruction of the corresponding bacteria."

The reaction that results as a consequence of the injection of the appropriate dosage is at first to increase slightly the existing symptoms, and to be followed usually within forty-eight hours by a moderation of the clinical signs of activity. This, according to Wright, is the negative and positive phase reaction, produced by the endotoxins acting as a stimulus to the healthy cells, not only stimulating phagocytosis, but an increased cellular immunity.

The earlier theories of immunity, as advanced by Pasteur and Chauveau, have now little more than an academic interest. The work done by Metchnikoff in 1883 shed the first scientific light upon the subject and opened the way for further study and investigation, that has resulted in the accumulation of a vast number of data relative to the body fluids and their varied reaction to disease.

Two schools of immunity may be said to have grown up, side by side as it were; each starting with a definite hypothesis that would relegate the theory of the opposite school to second place. Metchnikoff, in 1883, showed that the polynuclear leukocytes were active in the defense of the human organism against invasion by parasites. This action of the leukocytes he termed phagocytosis, and in time this was to be known as the cellular theory; while Ehrlich and his coworkers ascribed to the body fluids the processes of protection and regeneration, later to be termed the humoral theory, and to be elaborated into what is known as Ehrlich's side chain theory. With the passing of the years and the increase in knowledge concerning the fluids and their functionings, the two theories have become essentially a part of each other, since their interdependence has become so evident.

In 1903 Wright and Douglas and Neufeld and Rimpau threw considerable light upon the subject, by demonstrating experimentally that one action of the body fluids was an explanation for these phenomena, it can be stated, in general, that the degree of neg-

ative chemotaxis is in proportion to the virulence of the invading organism.

According to Metchnikoff, various body cells are capable of becoming phagocytes. The polynuclear leukocytes are particularly active in acute infections and have been called microphages. Endothelial cells, mononuclear leukocytes, and embryonic connective tissue cells are more active in chronic infections and have been designated macrophages. It was observed in the studies of the leukocytes and other cells that in addition to being attracted toward the seat of an infection by some unknown chemical stimulus they were also repelled, or at least the attraction was counterbalanced. These actions were termed positive and negative chemotaxis, and while there is not as yet directed against the micro-organisms, lowering their resistance and making them, as it were, more attractive to the phagocytes, thus facilitating phagocytosis. Wright gave to these substances the name of opsonins, from *opsono*, I prepare for. It has been shown that opsonized bacteria attach themselves to the protoplasm of the leukocytes, a physiochemical phenomenon that occurs regardless of whether the leukocyte is dead or alive, although only the living leukocyte is able to ingest them.

The humoral theory, according to Kolmer, which would ascribe the power to resist infection to the body fluids, may be said to have had its origin in 1896, when Fodor discovered that the blood of the rabbit will kill anthrax bacilli in the test tube, independently of cells and phagocytosis.

Ehrlich asserts that a cell has two important functions; the first is the special physiologic function, as that of a nerve cell to conduct, of a gland cell to secrete; the second function is that of nutrition, and presides over the processes of waste and repair. Each of the molecules composing the complex cell is believed to possess these two functions; one portion being concerned with the special function of the molecule, the other with its nourishment. The second portion, or that concerned with nutrition, is of more importance in relation to the problems of immunity. Ehrlich conceives this as consisting of a special executive center, in

connection with which there are nutritive side chains, or receptors, which enter into chemical combination with food atoms, after which follows a digestive or absorptive process, whereby the food atom is incorporated in the cell molecule. It is also assumed that the food atom possesses a special haptophore for union with the cell receptor, and when brought into contact with the side arm receptor of the cell molecule the two become anchored. Ehrlich evolved this ingenious theory first in explanation of digestion and nutrition, and later amplified it to explain the action of toxins and the production of anti-toxins. It is assumed that the toxin of an infection possesses a haptophore portion, and in the event of an infection with the toxin present in the body fluids it unites with the cell receptors, causing more or less damage. The toxin may be sufficiently potent to destroy the cell, and if a large number of cells are injured or destroyed symptoms of disease are present, and the death of the infected host may follow. On the other hand, the cell though injured, may not be dead and will at once proceed to repair the damage. In accord with Weigert's "over-production theory", nature is lavish in its processes of repair, and the cell not only replaces its lost receptors, but produces large numbers of them; these having no place for attachment, are thrown into the blood stream, and as they possess the same structure as the original receptor are capable of uniting with and neutralizing the toxin or antigen. Adami claims that the antigen probably enters into intimate relationship with the cell and that the continued stimulation of its presence is responsible for the over production of receptors.

Further, the organism growing in the tissues produces a soluble toxin, that acts as a chemical irritant to the living cells and produces fever and malaise. When this same organism is grown under laboratory conditions it also produces the same soluble toxin that has the same toxic action upon the cells as the one growing in vivo, and does not aid in any way in the production of immunity. The endotoxins are contained within the organism itself and are the substances which stimulate the production of anti-

bodies; therefore, a vaccine should be carefully washed before being devitalized, since in the process of devitalizing many of the secondary infections. Numerous reports organisms are broken up and in consequence a quite considerable portion of the endotoxins freed, and if the vaccine is washed after being devitalized a measurable portion of the endotoxin is thereby lost.

The injection of a vaccine that is not indicated, is strongly contra-indicated, for it is an additional burden imposed on the protective forces of the body fluids; it occupies the attention of the immunizing machinery of the body cells, thereby detracting from the immunity produced to operate against the true invading organism. It is, therefore, a fallacy to employ the stock polyvalent vaccines; hence, if one would obtain results he must, of necessity, secure the pure, autogenous cultures from which to manufacture a vaccine.

In the researches of Wright and Douglas, their completion of the Metchnikoff theory, by the demonstration of the opsonins, and their elaborate studies of the bacterial vaccines, were logically followed by the wide spread adoption of these curative agents in have been made of the use of these agencies in treating pulmonary tuberculosis, and the summary of my personal experience with them is, in my judgment, but adding to the evidence of their beneficent action.

Allen, in his summary of his observations and conclusions upon the influence of mixed infections in phthisis, and upon their cure by means of vaccines, says:

"Experience is yet too limited to justify any dogmatic expression of opinion, but it would appear that in vaccine treatment we have a most valuable adjunct to other methods of treatment of cases of pulmonary tuberculosis complicated by accessory microbes. Pyrexia and frequency of pulse may be reduced, the appetite and weight increased, exacerbations and complications diminished, and great reduction in the physical signs brought about, so that large areas of lung tissue which appeared to be deeply invaded by the bacillus tuberculosis may finally give no stethoscopic evidence of involvement; the way having thus been paved

for the employment of tuberculin, if this be indicated, or found to be necessary, a more rapid and complete cure should then be obtained in a considerable proportion of cases."

In "Tuberculosis", edited by Klebs (1909), Webb summarises as follows:

1. In no case has a patient been harmed;
2. Many patients have had exacerbations more rarely;
3. Expectoration in nearly all cases has been lessened; nocturnal coughs have frequently been eliminated;
4. In some cases a chronic catarrhal hoarseness has entirely disappeared;
5. Concomitant pus affections have cleared away, such as suppuration of ears, staphylococic acne and syecosis;
6. When these vaccines have been combined with small doses of Koch's new tuberculin spreading infiltrations have been averted and cleared up;
7. In a case which displayed tubercle bacillus, streptococcus, pneumococcus, staphylococcus, and micrococcus catarrhalis, the latter was entirely eliminated by appropriate vaccine, and the amount of sputum reduced from 4 oz. to 1 oz. daily;
8. Evacuations of from 4 to 6 oz. of sputum daily have, in several cases, been reduced to less than 1 oz.

In conclusion, the results of my personal experience with the autogenous vaccine in the treatment of certain forms of pulmonary tuberculosis have been very highly satisfactory. In selected cases, when the appropriate vaccine is secured, when the patient is living under approved conditions, with appropriate surroundings, good food and clean air, often pyrexia will be controlled, the expectoration and cough lessened; the appetite improves, and there will be a gain in the weight, and in the incipient or moderately advanced case the patient will stand a far better chance of securing the arrest or cure of his disease. In the far advanced cases some control of the annoying symptoms may not infrequently result under treatment. In numerous cases where the patient has been for months confined to his bed, with pyrexia, and the general malaise so frequently the accompaniment of this stage, he has, after a few weeks' treatment with the vac-

cine, been able to be up and around, to get out for brief rides and walks, and has gained a general relief from the annoying discomfort experienced but a short time previous.

Too much stress cannot be placed upon the care that must be exercised in the securing of right organism from which to manufacture the vaccine; it must be secured from the section of the lungs that is being devastated; it must be free from the innocuous mouth bacteria; it must be artificially grown, under conditions as nearly as possible approximating those under which it is living in the lungs, if the resultant vaccine it to be potent and beneficial to the patient.

The dosage of vaccine prepared according to the Wright method, and standardized for 500,000,000 organisms, must be gauged according to the virulence of the organism, and the reaction produced if any by the initial dose. It is safe to start with a small dose, approximately 50,000,000, gradually increasing the dose from week to week, advancing 50,000,000 every four to seven days.

In the chronic advanced types of disease prolonged treatment is essential to ultimate good results, and at the end of two months the patient should be taking about every five days 250,000,000 to 300,000,000. this is to be continued for six or eight months.

It is to be hoped that our laboratory workers will eventually evolve a more scientifically accurate method of determining the active and destructive organism in the mixed infection process. Experimental work along the line of complement fixation has been undertaken, and promises to be highly successful.

Vaccine Treatment of 100 Cases of Pulmonary Tuberculosis.

Case.	Sex.	Organism.	Stage of Disease.	Employed.	Unemployed.	Bed Case.	Apparent Cure.	Working.	Taking Cure.
1.....	F.	S.	F A.	*	*	*			
2.....	M.	S.	In.	*	*				
3.....	M.	P.	M.A.	*	*				*
4.....	F.	S P.	F.A.	*	*	*			
5.....	F.	S.	M.A.	*				*	

Case.	Sex.	Organism.	Stage of Disease.	Employed.	Unemployed.	Bed Case.	Apparent Cure.	Working.	Taking Cure.
6.....	M.	S.	F.A.		*				*
7.....	M.	S.	M.A.		*			*	
8.....	M.	S.	M.A.	*			*		
9.....	M.	S.	F.A.		*			*	
10.....	F.	S.	M.A.	*			*	*	
11.....	F.	P.	F.A.		*	*			
12.....	F.	S.	In.	*			*	*	
13.....	F.	P.	M.A.		*			*	
14.....	F.	S.	F.A.		*			*	
15.....	M.	S. Staph.	F.A.		*			*	
16.....	M.	P.	F.A.		*			*	
17.....	M.	S.	M.A.		*			*	
18.....	M.	S.	M.A.		*	*			
19.....	F.	S.	F.A.		*	*			
20.....	F.	S.	F.A.		*	*			
21.....	M.	P.	F.A.		*			*	
22.....	F.	S.	F.A.		*			*	
23.....	M.	S.	M.A.		*	*			
24.....	F.	S.P.	F.A.		*	*			
25.....	M.	P.	F.A.		*			*	
26.....	M.	P.	M.A.	*				*	
27.....	F.	S.	F.A.		*	*			
28.....	M.	S.	F.A.		*	*			
29.....	F.	S.	F.A.		*	*			
30.....	M.	P.	F.A.		*	*			
31.....		S.	F.A.		*			*	
32.....	M.	P.	F.A.		*	*			
33.....	M.	S.	F.A.	*				*	
34.....	F.	P.	In.		*			*	
35.....	M.	S.	F.A.		*	*			
36.....	F.	S.	In.	*			*	*	
37.....	F.	P.	M.A.		*		*	*	
38.....	F.	S.	M.A.		*			*	
39.....									
40.....	F.	P.	M.A.		*				
41.....	F.	S.	In.	*				*	
42.....	M.	S.	M.A.		*			*	
43.....	M.	P.	F.A.		*	*			
44.....	M.	S.	M.A.	*				*	
45.....	M.	S.	F.A.		*	*			
46.....	M.	P.	M.A.	*				*	
47.....	M.	S.	M.A.		*			*	
48.....	F.	P.	In.	*				*	
49.....	F.	S.	F.A.		*	*			
50.....	M.	P.	In.	*				*	
51.....	M.	S.	M.A.	*				*	
52.....	M.	P.	In.	*				*	
53.....	M.	S.	M.A.		*	*			
54.....	M.	P.	M.A.		*				
55.....	M.	S.	F.A.		*	*			
56.....	M.	P.	In.	*				*	
57.....	M.	S.	In.		*	*		*	
58.....	F.	S.	M.A.	*				*	
59.....	M.	P.	M.A.		*	*		*	
60.....	M.	S.	In.	*				*	
61.....	F.	S.	In.		*	*		*	
62.....	M.	S.P.	F.A.	*				*	
63.....	M.	P.	F.A.		*	*		*	
64.....	F.	S.	F.A.		*	*			
65.....	M.	P.	In.	*				*	
66.....	M.	P.	In.		*	*		*	
67.....	F.	P.	F.A.		*	*			
68.....	M.	P.	In.		*	*		*	
69.....	F.	S.	In.	*				*	
70.....	M.	P.	F.A.		*	*			
71.....	F.	S.P.	M.A.		*	*		*	
72.....	F.	S.	F.A.		*	*			
73.....	M.	S.	M.A.		*				*
74.....	F.	S.	F.A.		*				*
75.....	F.	S.	F.A.		*				*
76.....	F.	P.	M.A.		*				*
77.....	F.	S.	M.A.		*				*
78.....	M.	S.	F.A.		*	*			
79.....	F.	P.	F.A.		*	*			
80.....	F.	S.	M.A.		*				*
81.....	F.	P.	In.		*				*
82.....	M.	P.	F.A.		*				*
83.....	M.	S.	F.A.		*	*			
84.....	M.	S.	In.	*					*
85.....	M.	S.	F.A.		*				*
86.....	M.	P.	M.A.		*	*			
87.....	M.	S.	M.A.	*					*
88.....	M.	S.	In.	*				*	
89.....	M.	P.	F.A.		*	*			
90.....	F.	P.	In.	*				*	
91.....	F.	S. Staph.	M.A.		*				*
92.....	M.	P.P. Dip.	F.A.		*	*			
93.....	M.	S.	In.		*				*
94.....	M.	P.	In.		*				*
95.....	M.	P.	M.A.		*				*
96.....	F.	S.	F.A.		*	*			
97.....	F.	S.	M.A.		*				*
98.....	M.	S.	M.A.		*				*
99.....	F.	P.	F.A.		*	*			
100.....	F.	S.	M.A.		*				*

Key: S=streptococcus. P=pneumococcus. Staph=staphylococcus. P. Dip.=pseudo diphtheria bacillus. In.=incipient. M.A.=moderately advanced. F.A.=far advanced.

Twenty-two Incipient Cases Treated With Vaccine.

In each of the cases treated with the vaccine in the incipient stage, there was a general improvement in the condition as a whole. Expectoration was steadily decreased in quantity, and the greenish and yellow coloring faded, to gradually subside altogether.

Case.	Sex.	Organism.	Prognosis.	Result of Vaccine Therapy.
1....	M.	S.	Hopeful.	Arrest; returned and finished college.
2....	F.	S.	Favorable.	Arrest; apparent cure.
3....	F.	P.	Favorable.	Arrest; apparent cure.
4....	F.	S.	Favorable.	Apparent cure.
5....	F.	P.	Good.	Apparent cure.
6....	F.	S.	Good.	Apparent cure.
7....	F.	P.	Good.	Apparent cure.
8....	M.	P.	Good.	Arrested.
9....	M.	P.	Favorable.	Quiescent.
10....	M.	P.	Good.	Apparent cure.
11....	M.	S.	Good.	Improved.
12....	M.	S.	Good.	Quiescent.
13....	F.	S.	Hopeful.	Improved.
14....	M.	P.	Favorable.	Improved.
15....	M.	P.	Favorable.	Arrest; apparent cure.
16....	M.	P.	Favorable.	Quiescent.
17....	F.	S.	Favorable.	Quiescent.
18....	F.	P.	Favorable.	Improved.
19....	M.	S.	Good.	Improved.
20....	M.	S.	Good.	Quiescent.
21....	F.	P.	Good.	Improved.
22....	M.	P.	Good.	Improving.

All living present date, September, 1915.

Male, 12; female, 10; streptococcus, 10; pneumococcus, 12; improved, 6; quiescent, 3; arrested, 5; apparent cure, 8; hopeful, 3; good, 10; favorable, 9.

List of Employed at Time of Treatment.

Case.	Stage of Disease.	Sex.	In Colo.	
1.....	M.A.	F.	*	Marked improvement.
2.....	M.A.	M.	H.	Improved.
3.....	In.	F.	*	Marked improvement.
4.....	M.A.	M.	*	No improvement.
5.....	F.A.	M.	H.	Slight imp. amel.
6.....	In.	F.	*	Good improvement.
7.....	In.	F.	*	Marked improvement.
8.....	M.A.	M.	*	Slight improvement.
9.....	M.A.	M.	D.	Slight improvement.
10.....	In.	F.	*	Good improvement.
11.....	M.A.	M.	*	Good improvement.
12.....	In.	M.	*	Good improvement.
13.....	M.A.	M.	*	Good improvement.
14.....	M.A.	F.	*	Good improvement.
15.....	In.	M.	*	Good improvement.
16.....	F.A.	M.	D.	No improvement.
17.....	In.	M.	H.	Good improvement.

18.....	F.A.	F.	*	Slight improvement.
19.....	M.A.	M.	*	Good improvement.
20.....	In.	M.	*	Good improvement.
21.....	In.	F.	*	Good improvement.
22.....	M.A.	M.	?	No improvement.
23.....	In.	F.	*	Good improvement.
24.....	In.	M.	*	Slight improvement.

Key:—H, home; D, dead.

Slight imp., 5; good imp., 13; no imp., 3; marked imp., 3; dead, 2; returned home, 3; whereabouts unknown, 1 in Colorado and working, 18; F, 9; M., 15; total 24.

Far advanced, 1 dead; 1 still working; 1 living, unable to work.

Moderately advanced (10) 1 dead; 8 still working; 1 at sanatorium.

Incipient (11) apparently well and able to do their usual work.

In each case of the incipient group, the expectoration gradually ceased and eventually disappeared. General health markedly improved.

Thirty-four Moderately Advanced Cases Under Vaccine.

Case.	Sex.	Working Stage.	Organism.	Prognosis.	Result of Treatment.
1.....	M.		P.	Doubtful.	Improved some; later retrogressed.
2.....	F.	*	S.	Good.	Marked improvement; apparent cure.
3.....	M.	*	S.	Hopeful.	Good improvement; has left state.
4.....	M.	*	S.	Good.	Good improvement.
5.....	F.		S.	Hopeful.	Marked improvement; quiescent.
6.....	F.		P.	Doubtful.	Marked improvement; prob. slowly retrogressed.
7.....	M.		S.	Doubtful.	Good improvement; working now.
8.....	M.		S.	V. Doubtful.	Slightly improved; returned east to die.
9.....	M.		S.	Hopeful.	Good improvement.
10.....	M.		P.	Hopeful.	No improvement noted.
11.....	F.		P.	Good.	Marked improvement; apparent cure.
12.....	F.		S.	Doubtful.	Improvement good; continues.
13.....	F.		P.	Doubtful.	Slight improvement.
14.....	M.		S.	Doubtful.	No improvement noted.
15.....	M.	*	S.	Hopeful.	Slight improvement; dropped treatment.
16.....	M.	*	P.	Poor.	Not much change noted; fatal H.
17.....	M.	*	S.	Poor.	No improvement.
18.....	M.		S.	Poor.	Slight improvement.
19.....	M.		S.	Doubtful.	Marked improvement.
20.....	M.	*	P.	Hopeful.	Marked improvement.
21.....	F.		S.	Hopeful.	Marked improvement.
22.....	M.		P.	V. Doubtful.	Slight improvement; dropped treatment.
23.....	F.		P.	Doubtful.	Fair improvement.
24.....	M.		S.	Hopeful.	Good improvement.
25.....	F.		P.	Poor.	No improvement.
26.....	F.		S.	Hopeful.	Good improvement.
27.....	F.		S.	Hopeful.	Good improvement.
28.....	M.		P.	Hopeful.	Marked improvement.
29.....	M.	*	S.	Good.	Marked improvement; at work now.
30.....	F.		Staph.	Good.	Marked improvement.
31.....	M.		P.	Poor.	Slight improvement; left town.
32.....	F.		S.	Fair-Hope.	Slight improvement.
33.....	M.		S.	Fair-Hope.	Steady improvement; good.
34.....	M.		S.	Fair-Hope.	Slight improvement.

Male, 21; female, 13; streptococcus, 21; pneumococcus, 12; staphylococcus, 1.

Results of Treatment—No improvement, 5; slight improvement, 9; good improvement, 7 marked improvement, 10.

Prognosis—Doubtful, 10; poor, 5; hopeful, 14;

Forty-three Far Advanced Cases.

Case.	Sex.	Organism.	Prognosis.	Effect.
1.....	F.	S.	Doubtful.	Improved.
2.....	F.	S.P.	Hopeless.	Doubtful; imp.
3.....	M.	S.	Hopeless.	Improved.
4.....	M.	S.	Hopeless.	Good improvement.
5.....	F.	P.	Hopeless.	Improved.
6.....	F.	S.	Hopeless.	Improved.
7.....	M.	S.	Hopeless.	Slightly improved.
8.....	M.	P.	Doubtful.	Slightly improved.
9.....	F.	S.	Hopeless.	No improvement.
10.....	F.	S.	Hopeless.	No improvement.
11.....	M.	P.	Hopeless.	No improvement.
12.....	F.	S.	Hopeless.	No improvement.
13.....	F.	S.P.	Hopeless.	Good improvement.
14.....	M.	P.	Doubtful.	Slightly improved.
15.....	F.	S.	Hopeless.	No improvement.
16.....	M.	S.	Hopeless.	No improvement.
17.....	M.	P.	Hopeless.	No improvement.
18.....	M.	P.	Doubtful.	No improvement.
19.....	M.	S.	Doubtful.	Slightly improved.
20.....	M.	P.	Hopeless.	Slightly improved.
21.....	M.	S.	Hopeless.	Amelioration; imp.
22.....	M.	S.	Hopeless.	Improved.
23.....	M.	P.	Hopeless.	Improved.

24.....	M.	S.	Doubtful.	Good improvement.	34.....	F.	S.	Doubtful.	Improved.
25.....	F.	S.	Hopeless.	Good improvement.	35.....	M.	S.	Hopeless.	Good improvement.
26.....	M.	S.	Hopeless.	Improved.	36.....	F.	P.	Hopeless.	Good improvement.
27.....	M.	S.P.	Hopeless.	Slightly improved.	37.....	M.	P.	Hopeless.	Good improvement.
28.....	M.	P.	Doubtful.	Slightly improved.	38.....	M.	S.	Hopeless.	Good improvement.
29.....	F.	S.	Doubtful.	Good improvement.	39.....	M.	S.	Hopeless.	Slightly improved.
30.....	F.	P.	Doubtful.	Good improvement.	40.....	M.	P.	Hopeless.	No improvement.
31.....	M.	P.	Hopeless.	Slightly improved.	41.....	M.	Pdiph.PD	Doubtful.	Slightly improved.
32.....	F.	S.	Hopeless.	Improved.	42.....	F.	S.	Hopeless.	Slightly improved.
33.....	M.	S.	Hopeless.	Slightly improved.	43.....	F.	P.	Doubtful.	Slightly improved.

Thirty-one Cases Confined to Bed.

Case.	Dead.	Stage.	Sex.	Bacteria.	Prognosis.	Effect of Vaccine Treatment.
1.....		F.A.	F.	S.	V. unfav.	Marked improvement.
2.....	*	F.A.	F.	S.&P.	V. unfav.	Imp. for time; later retro. Died H.
3.....	*	F.A.	F.	P.	V. unfav.	Imp. for time; later failed died rupture of lung.
4.....	*	M.A.	M.	S.	Doubtful.	Imp. Died later with hemorrhage.
5.....	*	F.A.	F.	S.	V. unfav.	Amelioration of bad symptoms. Generally made comfortable low temp.
6.....	*	F.A.	F.	S.	V. unfav.	Apparently no effect; died.
7.....		M.A.	M.	S.	Hopeful.	Marked imp. Returned home in fair health.
8.....		F.A.	F.	S.&P.	Doubtful.	Amelioration temp. and chills; gained in weight. Steady imp. for two years.
9.....	*	F.A.	F.	S.	V. unfav.	Amelioration of symptoms.
10.....	*	F.A.	M.	S.	V. unfav.	No improvement noted.
11.....	*	F.A.	F.	S.	Hopeless.	Temp. controlled; some amelioration of symptoms.
12.....		F.A.	M.	P.	Doubtful.	No improvement noted.
13.....		F.A.	M.	P.	Doubtful.	Marked improvement.
14.....	*	F.A.	M.	P.	Hopeless.	No effect noted.
15.....	*	F.A.	M.	P.	Doubtful.	No effect noted.
16.....		F.A.	F.	S.	Doubtful.	No effect noted.
17.....		M.A.	M.	S.	Hopeful.	Marked imp. temp. and general condition.
18.....		F.A.	M.	S.	Hopeless.	No imp. except amelioration of temp.
19.....		F.A.	F.	S.	F. hopeful.	Marked imp.; general gain weight and strength.
20.....		F.A.	F.	P.	Doubtful.	General imp. in every way.
21.....		F.A.	M.	P.	Doubtful.	General imp.; hemorrhage and temp. control.
22.....	*	F.A.	F.	S.	Hopeless.	Slight control of temp.
23.....		F.A.	M.	S.	V. unfav.	Marked imp. in every way. Gain in weight and strength; temp. controlled.
24.....	*	F.A.	F.	P.	V. unfav.	Control of bad sympt.; especially temp. and chills.
25.....		F.A.	M.	S.	Doubtful.	Marked imp. temp., weight and pulse.
26.....		M.A.	M.	P.	Hopeful.	Marked imp. temp., weight and pulse.
27.....	*	F.A.	M.	P.	Hopeless.	No improvement noted.
28.....		F.A.	M.	PD.	Doubtful.	Improved.
29.....		F.A.	F.	Staph.	Doubtful.	Improved.
30.....		F.A.	F.	P.	Doubtful.	Improved.
31.....		F.A.	M.	S.	Doubtful.	Marked improvement.

Moderately advanced, 3; far advanced, 28; living, 18; female, 15; male, 16; streptococcus, 18; pneumococcus, 11; staphylococcus, 1; P. diph., 1. Sixteen far advanced cases not confined to bed.

Summary of Treatment With Autogenous Vaccines of a Series of 100 Cases of Pulmonary Tuberculosis. (Over a Period of Four Years.)

Male, 58; female, 42.

Stage of disease: Incipient, 22 moderately advanced, 35; far advanced, 43.

During the four years: Died, 17; still living, 83; male, 7; female, 10.

When first seen: 24 were employed, 9 female; 15 male; 76 unemployed.

Stage of disease: Incipient, 11; still employed. Moderately advanced, 10; 1 dead, 1 in sanatorium, 8 still employed. Far advanced, 3; 1 dead, 1 living, unable to work; 1 employed.

Totals: 2 dead; 3 returned home; 1 whereabouts unknown; 18 still in Colorado and able to work. No improvement, 3; slightly improved, 5; good improvement, 13; marked improvement, 3.

In each of the incipient cases there was a distinct improvement in the general symptoms; cough and expectoration lessened and gradually disappeared; general physical condition showed improvement and gain in weight.

Of the 22 incipient cases, 12 were male; 10 re-

male. Streptococcus infection present, 10; pneumococcus, 12.

Prognosis: 3 hopeful, 9 favorable, 10 good.

Results: Quiescent, 3; improved, 6; arrested, 5; apparent cure, 8.

Of the 34 moderately advanced cases, 21 were male; 13 female.

Streptococcus infection, 21; pneumococcus, 12; staphylococcus, 1.

Prognosis: Poor, 5; doubtful, 10; hopeful, 14; good 5.

Results: No improvement, 5; slight improvement, 9; good improvement, 9; marked improvement, 11.

Of the 43 far advanced cases, 25 were male and 18 female.

Organisms: Streptococcus, 25; pneumococcus, 16; staphylococcus, 1; pseudo diphtheria bacillus, 1.

Prognosis: Hopeful, 3; doubtful, 12; hopeless, 28.

Died, 15; living 28.

Results of Treatment: No improvement, 7; amelioration of symptoms, 13; slight improvement

and later retrogression, 12; good improvement, 11.

	Totals.			
	Incipient.	Mod'ly Adv.	Far Adv.	Total.
No improvement		5	7	12
Slight improvement		9	12	21
Good improvement	6	9	11	26
Marked improvement ...	3	11	..	14
Arrested	5	..	..	5
Apparent cure	8	..	..	8
Amelioration .....	..	..	13	14
Totals	22	35	44	100

News Notes

It is understood that near the 15th of January some eight thousand additional medical officers are to be assembled at Fort Riley from other camps, there being four thousand, approximately, already stationed there. In that event, the number of medical reserve officers at Fort Riley will be more than half of the total enrollment in this branch of the army.

Dr. Curtis Atkinson of Fort Collins has received his commission as Captain in the Medical Reserve Corps. He is located at the Aviation Camp near Wichita Falls, Texas.

Dr. A. W. Rew of Fort Collins is at present located at Fort Sam Houston, Texas, in command of an ambulance company. Latest reports are to the effect that he will start for the hot place shortly after the first of the year.

Bennett Medical College and the Chicago College of Medicine and Surgery are now combined to form the medical department of Loyola University of Chicago. The purchase of the buildings and equipment of the Chicago College was made recently by Loyola University officials.

The beginning of winter finds the work of army training going on at full blast in a hundred camps and stations. Not far from half of the total number of men training are encamped in the big National Army cantonments. In these the United States has sixteen new cities, each as large as Pueblo or Colorado Springs. Living conditions in these camps may not be quite up to the top of the high American standard, but it safely can be said that no large army of soldiers was ever housed so comfortably before. There will be no freezing this winter. Four of the cantonments situated farthest north have steam heat, the rest have to put up with hot water systems.

A survey of the state made by the Colorado State Medical Committee of National Defense, of which Dr. W. W. Grant is chairman, disclosed the fact that there are 1,733 licensed physicians in the state. Through questionnaire methods, 335 of these have been designated as in all respects eligible for service. As 170 Colorado physicians have already enlisted in the medical reserve corps, it would seem that the balance of Colorado's quota, namely 73, should be easily secured from the eligible list mentioned above.

Captain H. E. Hall of La Junta, who two years ago accepted under protest the secretaryship of the La Junta City Hospital Association, has so pleased the medical fraternity of that place by his efficient conduct of the office that at the annual meeting of the association they presented to him a very handsome wrist watch accompanied by a letter expressing their high appreciation of his valuable service.

Anti-tuberculosis workers will be interested in a new play (not a 'movie') which deals entirely

with the problem of tuberculosis. It is said to be unique, providing in a dramatic form much that is of real educational value to the general public and discussing very plainly some important problems that every anti-tuberculosis association should feel interested in. The play will be produced in the most up-to-date and finished manner possible and its script has been passed upon by the executive office of the National Association for the Study and Prevention of Tuberculosis, the staging also having been similarly viséed. Critics of merit have said without hesitation that this play is far stronger than "Damaged Goods". The promoters will open in Newark, N. J., on January 7, then show in Philadelphia, then proceed to New York for a run on Broadway.

The National Association for the Study and Prevention of Tuberculosis is trying to secure through Provost Marshal General Crowder an order to all army examining boards, instructing the chairman to exclude from service under the new draft all men who are shown to be tuberculous, by means of the following proposed procedure; the state constituent Associations are to consult the records, within their respective states, of tuberculosis hospitals and sanatoria, tuberculosis clinics, state and local boards of health, municipal and county poor authorities, charity organizations and other relief agencies, general hospitals and dispensaries, visiting nurse associations, welfare departments of corporations, etc., and obtain from them as complete information as possible concerning all men between the ages of twenty-one and thirty-one recorded as tuberculous, whether active, arrested or cured cases. It is proposed next that these men be provided affidavits as to their condition or history which shall be presented to the local examining board along with the usual questionnaire and constitute a valid claim for exemption; these certificates, of course, to be signed by physicians of known repute in the tuberculosis field.

At a conference which Senator John F. Shafroth had with Surgeon General Gorgas recently, it was announced unofficially, so the newspapers say, that this state's claim for a convalescent camp has been "clinched". The only question now to be decided is which one of Colorado's many desirable sites will be chosen for the camp.

Dr. W. H. Sharpley, manager of health and charities in the City of Denver, has issued clean-up orders to force the proprietors of fifteen-cent rooming houses to provide clean, sanitary and decent beds and rooms for their patrons. After January 1, it is proposed to deal severely with the proprietor of any rooming house or hotel who has not come up to the standard of the new regulations.

The Roll of Honor at the county hospital, Denver, being a list of doctors who have been given leave of absence for the period of the war, has been given out as follows: Doctors A. L. Beagler, W. W. Jones, J. N. Hall, H. L. Fowler, H. G. Garwood, F. E. Rogers, W. A. Jayne, E. W. Lazell, C. L. Pershing, R. G. Packard, S. F. Jones, C. B. Ingraham, A. J. Markley, W. A. Sedwick, W. M. Bane, O. D. Wescott, W. W. Williams, R. P. McGee, A. W. Stahl, W. M. Wilkinson and B. C. Dorset.

Income tax orders given out by the government as affecting physicians are to the following effect: A physician may claim as reductions the cost of medicines and medical supplies used by him in the practice of his profession, expenses paid in the operation and repair of an automobile used in making professional calls, dues to medical so-

cieties and subscriptions to medical journals, the expenses of attending medical conventions, the rent paid for office rooms and the hire of office assistants, the cost of the fuel, light, water, telephone, etc., used in such office rooms. Amounts expended for books, medical supplies and surgical instruments of a permanent character are not allowable as deductions. The physician, if renting a home and using a part of it as an office, may deduct such a part of the rent as is properly chargeable to the rooms so used.

Recent pneumonia statistics for the city of New York covering a six months' period in the late fall of 1917 show almost a hundred per cent increase over a like period in 1915 and a twenty per cent increase over 1916. Pneumonia deaths are said to be more frequent there among the Irish and the native Americans than among those of other nationalities and lowest among the Germans, Russians and Hungarians, while in the case of the children the Italians give three and a half times as many deaths as the Germans, three times as many as the Russian, Austro-Hungarian or Irish, and a little more than twice as many as the Americans.

Doctor Curtis Atkinson of Fort Collins, now in Texas in an army cantonment, was recently promoted to a captaincy in the M. O. R. C. and is now acting major, attending to the duties of the latter office.

Dr. Henry A. Barclay, formerly located at Colona, writes to the Montrose Enterprise that he is now at Culver, California. He says that Los Angeles recently went dry and that he stayed there until after the election in order to cast his vote against John Barleycorn.

Captain Lewis H. McKinnie of Colorado Springs left the early part of December for Camp Bowie, near Fort Worth, Texas, where he will be attached to the surgical section of the thirty-sixth division of the national army.

Dr. L. M. Gwinn, who has been at Berthoud since last March, has returned to his old field at Fairplay.

Dr. S. Fosdick Jones is attached to the American Red Cross Military Hospital Number One, American expeditionary forces, France.

Dr. William L. Edmundson accompanied the expeditionary forces to France with General Pershing.

Maj. Edward Lazell and Capt. A. J. Campbell are with the Rainbow Division in France.

Dr. A. J. Chisholm of Trinidad has received a commission as first lieutenant in the medical officers' reserve corps and has been ordered to report to Fort Riley.

Dr. Wm. Wiley Jones, until recently a captain in the M. O. R. C., has been transferred to the regular army with a lieutenant's commission.

Dr. William C. Finnoff, previously a lieutenant in the M. O. R. C., lately received a captain's commission.

At the National Jewish Hospital for Consumptives, a cafeteria has been established recently, funds for which were donated. It is hoped that from sixty to seventy-five per cent of table waste will be eliminated by this change of service.

A double wedding occurred in Denver last month when Dr. Charles D. McKenzie was married to Miss Kathryn M. O'Grady, and Dr. James A. Philpott to Miss Hazel Schwab.

Dr. V. R. Pennock of Longmont has received a commission as first lieutenant in the Medical Reserve Corps.

Dr. S. B. McFarland of Longmont has received

a commission as first lieutenant in the Medical Reserve Corps.

Dr. J. M. Shields of Grand Junction has been commissioned a first lieutenant in the Medical Reserve Corps.

The entire sophomore class of the University of Colorado Medical School went to Denver just before Christmas to enlist in the Medical Reserve Corps for service following their graduation, but, owing to some misunderstanding of arrangements, were unable to carry their purpose through. They will be given an opportunity later. This enlistment is said to carry with it special instruction during the continuance of their school work with, perhaps, certain training camp activities in the summer.

Dr. Cyrus W. Poley of Boulder was ordered to report at Fort Riley by January 1st. His wife and baby have accompanied him as far as the nearest town, Junction City.

Dr. W. J. White of Longmont has been advised that he has passed examination for the Medical Reserve Corps and will soon receive his commission.

Dr. Hart Goodloe of Canon City, who has been at Fort Riley for several months past, has been ordered to proceed to France at once with the officers of Evacuation Hospital Number One.

Dr. George M. Anderson of Casper, Wyoming, was a visitor in Denver in the latter part of December.

Lieutenant Wallace Kent has returned to Fort Riley after spending the holiday season in Denver.

Fremont County Medical Society, having in July passed resolutions by which its members are obligated to take care of the patients of doctors absent upon war duty on a basis of fifty per cent of collections, has now amended the resolutions to the effect that the secretary-treasurer be authorized to receive and turn over to the physicians at the front all money collected for such purpose by the physicians of the county and that a complete report of such transactions be read at each meeting of the society.

Colorado's method of raising her quota of physicians for medical reserve corps of the army is being copied by the medical committee of national defense in Washington, according to advices recently received by Major W. W. Grant, chairman of the medical committee of the Colorado Council of Defense.

LETTER FROM DR. A. J. MARKLEY.

Dr. Melville Black sends us for publication the following letter from Dr. A. J. Markley of Denver, now engaged in active military service:

*Dec. 10, 1917.

Dear Doctor Black:

Your very welcome letter recently received. It came at a time when reminders of home are doubly welcome, and I trust that every one who was away from home under similar circumstances was cheered by a letter from some thoughtful friend on Thanksgiving day.

I was most interested in hearing of your work on a permanent committee to furnish funds and maintain the spirit of determination to win the war. It requires but a short time in the army to learn that this war cannot be won by the men who wear uniforms alone, and no one who honestly feels that he can do better and more useful work at home should be charged with lacking in patriotism. In fact, I often think it requires more courage to stay at home than to enter active serv-

ice and go away, provided that one does his full duty at home, because it is so easy to drift back into the old accustomed ways of living and to forget that, not having made one great sacrifice, one is daily and hourly called upon to make a multitude of small ones. Still it is just in this way that the war must be won, and eternal shame and disgrace should be the lot of every man who now fails to do his part by giving himself, giving his money or giving his time and energy.

It seems very strange to think of Denver without Hall and Jayne and Arneill and all the other splendid fellows who have gone away so quietly and so willingly and some of whom inevitably will not come back. No one who has not done this can ever realize what it means, but I am quite sure that not one of these men will regret having gone if only the sacrifice be not in vain.

I am very comfortably located here. Schofield is a large post and there is plenty of work to do. Have charge of the venereal ward in the hospital and of course a large out-patient service. Honolulu is about twenty miles away, so I have seen very little of that famous place or any of the wonders for which the islands are noted. We are now in the midst of the rainy season and everything is wonderfully green and beautiful, so that when the sun shines it is about like early May in the eastern United States.

I hope the war will not last so long that it would be impossible for me to return to Denver, but even if that occurs, I hope even more earnestly to retain my friends there and will therefore endeavor to keep in touch with them.

Yours sincerely,

A. J. MARKLEY,
Schofield Barracks, T. H.

Medical Societies

LARIMER COUNTY.

Larimer County Medical Society held its regular meeting on Wednesday evening, November 7, 1917, at the residence of Dr. W. A. Kickland, Fort Collins.

The attendance was good. Dr. W. H. Winslow was admitted to membership in the society. The guest of the evening, Dr. S. B. Childs of Denver, showed a number of Stereoscopic Radiographs dealing mostly with lesions of the gastro-intestinal tract. Dr. Childs' demonstration of the subject was listened to with much interest by all present, and served to show that the x-ray as employed at the present day, is a most valuable adjunct in arriving at a correct diagnosis of troubles located in the internal organs. At the close of the meeting a lunch was served.

T. C. TAYLOR,
Secretary.

Larimer County Medical Society met in regular session on Wednesday evening, December 5, 1917, at the Northern Hotel, Fort Collins. After the banquet a short business session was held, at which Dr. W. W. Yates of Loveland was elected to membership in the society, and the annual election of officers was held.

The officers for the coming year will be: W. N. DeArmond, president; S. A. Joslyn, vice pres-

ident; T. C. Taylor, secretary; E. Stuver, treasurer; J. D. Carey, censor, and J. G. McFadden, delegate to the state convention for 1918. The medical profession of the entire county was well represented at the meeting and a number of visitors from outside were present. Dr. Edward Jackson of Denver, president of the Colorado State Medical Society, addressed the meeting and short talks were given by Drs. J. R. Arneill, F. H. McNaught, T. L. Howard and J. M. Foster of Denver.

T. C. TAYLOR,
Secretary.

COLORADO OPHTHALMOLOGICAL SOCIETY.

The regular meeting of the Colorado Ophthalmological Society was held at Colorado Springs October 13, 1917, Dr. J. R. Robinson presiding. Dr. E. R. Neeper presented a woman, age forty, who had subacute glaucoma. In connection with Dr. Neeper's case, glaucoma in general was discussed at length by Drs. M. Black, Wm. H. Crisp, E. E. McKeown, D. A. Strickler, H. M. Thompson, Edward Jackson, C. E. Walker, J. J. Pattee, and F. R. Spencer. The importance of focal infection was emphasized.

Dr. J. A. Patterson presented a case of interstitial keratitis in a boy, aged eleven, probably luetic. Dr. Patterson's case was discussed by Drs. M. Black, F. E. Wallace, and F. R. Spencer.

Dr. J. R. Robinson presented three cases: one of diabetic lenticular opacities; one of posterior synechia and broad arcus senilis; and one of hemorrhage into the vitreous. Dr. Robinson's cases were discussed by Drs. H. M. Thompson, M. Black, Edward Jackson, W. H. Crisp, O. Orendorff, and F. R. Spencer. The use of the keratometer in watching corneal curvature and astigmatism was suggested by Dr. Orendorff.

Dr. E. R. Neeper reported a case of divergent squint in a patient who is hyperopic, and who formerly had convergent squint.

For a more detailed report, see the transactions in the Ophthalmic Record and the Annals of Ophthalmology.

FRANK R. SPENCER,
Secretary.

The regular monthly meeting of the Colorado Ophthalmological Society was held November 17, 1917, Dr. Edward Jackson presiding.

Dr. G. F. Libby presented a case of glaucoma secondary to perforating corneal ulcer which occurred seven and one-half years ago, in a boy of twelve years. Dr. Libby's case was discussed by Drs. D. A. Strickler, J. A. Patterson, E. M. Marbourg, O. Orendorff, and Edward Jackson.

Dr. J. A. McCaw presented a man showing retinal arteriosclerosis. This case was discussed by Dr. Jackson.

Dr. Edward Jackson presented three cases as follows: One with useful vision with strong plus spheres after congenital cataract; one of extreme conical cornea; and one of chronic uveitis with opaque nerve fibers. The cases were discussed by Drs. J. A. Patterson, J. A. McCaw, O. Orendorff, and F. R. Spencer.

Dr. F. R. Spencer presented a case of optic atrophy of traumatic origin. It was discussed by Drs. E. M. Marbourg, J. A. Patterson and D. A. Strickler.

Dr. J. A. Patterson made a further report on his case of interstitial keratitis, which he presented at the October meeting of this society.

Dr. E. M. Marbourg reported a case of dislocation of lens. This case was discussed by Drs.

C. E. Walker, J. A. Patterson, and F. R. Spencer.
For fuller reports of the transactions, see the
new American Journal of Ophthalmology.

FRANK R. SPENCER,
Secretary.

Book Reviews

The Roentgen Diagnosis of Diseases of the Alimentary Canal, by Russell D. Carman, M. D., Head of Section on Roentgenology, Division of Medicine, Mayo Clinic; Professor of Roentgenology, Graduate School of Medicine, University of Minnesota, and Albert Miller, M.D., First Assistant in Section on Roentgenology, Division of Medicine, Mayo Clinic; Fellow in Roentgenology, Graduate School of Medicine, University of Minnesota.

This book is written from the standpoint of the interpreter, not the technician. While the authors devote considerable space to teaching what they have learned from their own experience at the Mayo Clinic, they have not neglected gathering data from the other workers of repute in their own field, and so the book becomes a rather complete survey of the present status of x-ray in gastrointestinal conditions and is so far the only one published in the United States which is so broad in scope. It may therefore well serve as a text-book upon the subject handled, that of diagnostic interpretation.

A number of outstanding impressions follow the study of this work. There are many "pictures," the typing is large, good English is employed and the arrangement of matter is orderly, covering, in each section of the digestive tract, from the esophagus to the rectum, every functional and pathological derangement in which the x-ray has proven of value to date. The book is exact and thorough, but it is easy reading and statistics steal upon one unobtrusively.

The illustrations number 504 in a 558 page book and they are nearly all reproduced from roentgen plates. Their detail suffers somewhat in the reproduction, a thing impossible to avoid, and in a few instances it is difficult to make out the conditions claimed, which, of course, would probably be sufficiently clear in the original negatives. On the whole, though, the collection suffers the minimum in this respect. These cuts are all "negatives", so that anyone accustomed to interpreting plates need not reverse his process of perception in reading them. Normal plates are reproduced in number for various portions of the digestive tract and many pathological plates have been chosen to show variance in the picture of a given condition in different cases, these, with their explanatory text, being followed by special case reports bearing on the condition, together with the plate or plates from which the diagnosis was made or confirmed.

Upon technic, very little is said as to apparatus and its use, but the opaque meal and enema are discussed thoroughly and the handling of the patient as regards various advantageous positions, the control of spasm, and other such matters are equally well covered.

There may be said to be two schools of procedure in stomach examination by roentgen ray, those of one school relying upon serial plates taken in rather rapid succession, and placing little if any dependence upon the fluoroscopic screen, while other workers have adhered closely to the screen methods followed by confirmatory simple plate taking. The authors take an in-

termediate stand and use both means, employing the multiple plate technic when diagnosis is otherwise in doubt or of border line status.

If the reader is interested in the views of these authors upon the relations of the roentgenologist with the clinician, he will find them discussed on pages thirty-seven and thirty-eight of the book, the conclusion favored by them being, to quote; "The roentgenologist himself may correlate his findings with the clinical and other data. Under present conditions this is perhaps the most practical and efficient method. As a medical man he should have little difficulty in refreshing his knowledge of symptoms, laboratory reports, and, at least gross, physical signs. By so doing, his work will rest on broader foundations, and not only will his interpretations be tempered by the clinical data, but he will also acquire a more exact sense of purely clinical values."

This book is not merely for the specialist, but will be found interesting and valuable to the practitioner and surgeon and should become a distinct factor in bringing about a more marked realization on their part of the present day accuracy of x-ray diagnosis, particularly of cancer and ulcer of the stomach and ulcer of the duodenum, and emphasize the importance of its use as a regular procedure in such cases.

F. B. S.

Impotence and Sterility with Aberrations of the Sexual Function and Sex-Gland Implantation. By G. Frank Lydston, M.D., D.C.L. Formerly Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois, etc. Published by The Riverton Press, Chicago, 1917. Price, \$4.00. Sold by subscription only.

This work deals with the subject of Sex Aberration (a very good name) extensively, giving its author an opportunity to inject his ideas of deficiency or excess of sex-gland hormone as the cause of these conditions; this is a very interesting theory, and may well be true. The chapter on sex gland implantation embodies practically what has been published by Lydston previously on this subject, and is, as it were, a logical conclusion to the ideas expressed in the earlier chapters.

Sterility and impotence in the male, and sterility in the female, masturbation, sexual excess, spermatorrhoea and sexual neurasthenia are covered in detail, and in the usual fashion, with this exception, that the author's sociologic ideas are either much in advance of his time or are decided heresies, dependent on whether the reader believes or holds different views.

Written in a refreshing style and dedicated to the members of the American Urological Association, it will please the general medical reader besides teaching him much that is new to him.

W. M. S.

Technic of the Irrigation Treatment of Wounds by the Carrel Method; by J. Dumas and Anne Carrel. Authorized Translation by Adrian V. S. Lambert, M.D., Acting Professor of Surgery in the College of Physicians and Surgeons (Columbia University), New York. With an Introduction by W. W. Keen, M.D., L.L.D., F.R.C.S. (Hon.)

This little book of ninety pages was written especially for a correct understanding of the method by nurses and assistants. To get results with the Carrel treatment strict attention to every detail is necessary and this book gives the de-

tails in a clear and concise way. There are eleven plates which are very valuable in a correct understanding of the method. The materials used in the dressings are described and shown pictorially. The method of obtaining microscopical material for the examination of the wound secretions is given. The dressings, the irrigating apparatus and the technic of the irrigations are all described minutely without any obscurity. The way to prepare Dakin's solution is given. A glossary of three pages is appended, and also a full index. The book makes no attempt to teach the indications for the treatment. It is merely a little handbook which tells exactly how to use the treatment if one desires to employ it. For one who has not seen the work at Compiègne and who desires to use the Carrel treatment, this book is essential.

F. C. B.

A Reference Handbook of the Medical Sciences; by various writers. Third edition. Edited by Thomas Latinop Stedman, A.M., M.D. Complete in eight volumes. Volume eight S to Zym. Cloth. Pp. 782, 1917. Published by William Wood and Company, New York.

This volume, as the previous ones, embraces the entire range of scientific and practical medicine. It contains in addition a general index of all the eight volumes, thereby serving as an indispensable time saver for the busy general practitioner who hurriedly seeks information on any subject matter contained in this work. The list of contributors numbers eighty-two, the greater number of whom are among the foremost representatives of the medical profession. Each subject is considered in a concise, systematic manner giving information of real and proven value. It is illustrated by numerous chromo-lithographs and three hundred and thirty-seven half-tone and wood engravings.

J. L. M.

Roentgen Technic (Diagnostic); by Norman C. Prince, M. D., Attending Roentgenologist to the Omaha Free Dental Dispensary for Children, Associate Roentgenologist to the Douglas County Hospital, etc., Omaha, Nebraska. Published by C. V. Mosby Company, 1917.

While roentgenology of late has developed rapidly to the estate of a highly specialized division of medicine, and is justly and necessarily practiced exclusively by many trained doctors, nevertheless the surgeon in isolated small communities legitimately will continue to use the x-ray as an adjunct to his other diagnostic means in bone and foreign body cases, at least; just as he will continue to encroach upon the domains of other specialists in the removal of tonsils, treatment of gynecological cases, etc. It is consequently much better that he have at hand instruction in the use of his apparatus than that he blunder along with imperfect methods and indifferent results due to enforced dependence upon his own experience.

This compact book will meet such a man's needs and is just what the author intended; a terse and handy treatise, adhering closely to its titular and introductory claims. It mainly is devoted to tube positions and exposure instructions, the positions of the patient for various plate-takings being abundantly and clearly illustrated by decidedly good photogravures. Final sections deal with dark room and lantern slide procedures and the author also includes a system of record filing and six graded floor plans for laboratory installa-

tion. He touches gingerly upon modern fluoroscopy of the chest and abdomen and ignores x-ray therapy.

Along with a sincere compliment to the author upon the admirable fulfillment in general of his purpose, the logical arrangement and exposition of his theme, and the good mechanical get-up of the book, the reviewer wishes to take the privilege of a friend and class-mate to say that while the complicated contraption illustrated probably offers the best solution of the problem of making multiple stomach exposures upon a single plate that has yet been offered, he hopes to see this process still further simplified.

Because of the cursory nature of the allusions to gastro-intestinal and chest work, the book's interest for the general surgeon will rest chiefly in the plate taking technic and foreign body localization methods. The former two branches are rightly left in the specialist's hands.

It will interest the reader to know that Doctor Prince is a graduate of Denver and Gross College of Medicine, year 1907, and is rather intimately known by many Colorado doctors.

F. B. S.

A Handbook of Practical Treatment, by many writers; edited by John H. Musser, Jr., B.S., M.D., Associate in Medicine in the University of Pennsylvania; and Thomas C. Kelly, A.M., M.D., Instructor in Medicine in the University of Pennsylvania. Volume IV. Philadelphia and London, W. B. Saunders Company, 1917.

This volume of the Handbook of Practical Treatment, edited by John H. Musser and Thomas C. Kelly, has been brought out for the purpose of reviewing the advances in treatment since the earlier volumes were written.

It gives an opportunity to the contributors to bring the treatments up to date. In order to make it as concise as possible those disorders in which practically no important changes in treatment have occurred are not considered in this volume.

Turning to treatment of any disease, one is pleased to find the latest treatments discussed pro and con by eminent specialists on that disease or specialty. As the title of the book implies, it covers all modes and lines of treatment, medical, surgical, vaccinal, glandular, hygienic and preventive, etc.

Among the advantages of a treatise of this kind is the fact that the newer accepted methods of treatment are not lost in a long array of older methods which have been largely discarded in the light of recent advances and research. The contributors of this volume are with few exceptions those of the earlier volumes.

We do not hesitate to say that this is a valuable addition to any medical library and that we have greatly enjoyed reviewing this book. We unreservedly commend it to the medical profession.

The volume is well indexed and is accompanied by a complete desk index of the four volumes, consisting of over two hundred pages.

H. S. S.

History of Medicine.—Suggestions for study and Bibliographic Data, by Fielding H. Garrison A.B., M.D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C., Second edition revised and enlarged. Octavo of 905 pages with many portraits. W. B. Saunders Company, Philadelphia and London, 1917. Cloth. \$6.50 net; Half Morocco, \$8.00 net.

(See editorial comment in this issue.)

A Cancer Decalogue.—The following Cancer Decalogue was recently prepared by the Standing Committee on the Control of Cancer of the Massachusetts Medical Society for publication in the Boston Medical and Surgical Journal: 1. The Classical Signs of Cancer are the signs of its incurable stages. Do not wait for the classical signs. 2. Early Cancer causes no pain. Its symptoms are not distinctive but should arouse suspicion. Confirm or overthrow this suspicion immediately by a thorough examination and, if necessary, by operation. The advice "Do not trouble that lump unless it troubles you" has cost countless lives. 3. There is no sharp line between the benign and the malignant. Many benign new growths become malignant and should therefore be removed without delay. All specimens should be examined microscopically to confirm the clinical diagnosis. 4. Precancerous stage. Chronic irritation is a source of cancer. The site and the cause of any chronic irritation should be removed. All erosions, ulcerations, and indurations of a chronic character should be excised. They are likely to become cancer. 5. Early Cancer is usually curable by radical operation. The early operation is the effective one. Do not perform less radical operations on favorable cases than you do on unfavorable ones. The chances for a permanent cure are proportionate to the extent of the first operation. Make wide dissections; incision into cancer tissue in the wound defeats the object of the operation and leads to certain local recurrence. 6. Late Cancer is incurable though not always unrelievable. Radium, X-rays, ligation, cautery, or palliative operations may change distress to comfort and may even prolong life. 7. Cancer of the Breast. All chronic lumps in the breast should be removed without delay. Benign tumors can be removed without mutilation. Examine all specimens microscopically. An immediate microscopical examination is desirable since, if positive, it permits a radical operation at the same sitting. A radical operation performed ten days after an exploration is almost never successful in curing cancer of the breast. 8. Cancer of the Uterus. Any irregular flowing demands thorough investigation. Offensive or even very slight serous flows are especially suspicious. Curette and examine microscopically. Amputate all eroded cervixes which do not yield promptly to treatment. Do not wait for a positive diagnosis. 9. Cancer of the Digestive System is difficult of early diagnosis and therefore unfavorable in prognosis. All persistent and recurring indigestions (more especially if attended by change of color and loss of weight) and any bleeding and offensive discharges demand prompt and thorough investigation. Do not wait for a positive diagnosis. 10. Cancer of the Skin. Any warts, moles or birthmarks which enlarge, change color, or become irritated should be removed promptly. They are likely to become cancer. Do not wait for a positive diagnosis.

The United States Food Administration.—At the time last summer when Cadorna's army was on the point of making the long-hoped-for break in the Teutonic lines, Italy ran short of wheat. The bread ration of the Italian soldier had to be cut from 750 grams a day to 600 grams. This may have had something to do with the crumbling of the Italian line, which came with the attacks of the German forces, for food is all important.

The United States Food Administration was not created until August 10th. Its work is to see that food in the more concentrated forms is saved from unnecessary consumption, in order that it may be shipped to our allies and prevent such contingencies as the cutting of the Italian ration.

As a part of this task Mr. Hoover asks each of us to eat an ounce less of sugar each day than we usually eat. This would still leave three-fourths of our ordinary consumption of sugar. The Americans and English use more sugar than any other nation, averaging about ninety pounds for each person per year. The English have now cut their consumption down to about one quarter. The French are eating about eighteen pounds per year and the Italians are reduced to twelve pounds. Our consumption a few years since was only sixty pounds per year, so that a reduction of one-fourth will leave us well supplied.

The American confectioners have been putting 400,000 tons of sugar a year into candy. This is enough to supply the entire English demand at the present rate. Recently the Administration has cut the candy makers down to 200,000 tons a year. The saving in this item would be enough to feed Belgium for one year.

Food control is also saving money for the American household. In May wheat was \$3.70 a bushel, flour at over \$17.00. The action of Congress brought wheat down to \$2.20 for this year's crop and the price of flour has been brought to \$10.25. This means a monthly saving at this one point of over \$68,000,000.

Hoarding is opposed because it keeps food out of the market when most seriously needed. The licensing system has almost eliminated hoarding, for jobbers and dealers cannot do business unless they have a license.

Wheat is the food which Europe needs most. The demand is for 400,000,000 bushels more than the United States and Canada can normally supply. This demand falls largely on us. By furnishing wheat we can most easily aid our own cause. We can substitute other foods, like corn, which cannot be shipped in ground form because it moulds, nor in bulk because there are not mills on the other side prepared to grind it.

We depend less on wheat than the European nations. Only 9 per cent of our diet is based on wheat, while 50 per cent of the Frenchman's diet depends on it.

The Food Administration has succeeded in maintaining a low price for bread. It has practically established the one pound loaf as a standard. While wheat has increased more than two and one-half times, the price of bread has increased only about 30 per cent. This has come largely through the cooperation of the bakers of the country in reducing waste, and of the millers in making a low charge for grinding.

Though the world's food supply has been much lessened the situation has been much improved by the United States Food Administration.

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Editorial Comment

THE PROGRAM FOR THE ANNUAL MEETING.

The Committee on Scientific Work of the State Medical Society is now planning the scientific program for the 1918 meeting. Those who contemplate presenting papers at this meeting are strongly urged to communicate with the chairman of the committee as early as possible.

Many of the active and honored members of the society whose names have appeared frequently and prominently upon the annual programs are now absent in the service of the country. If, therefore, the success of the coming meeting is to be assured, it is necessary that the program bear many new names. Here is a duty and an opportunity.

The subjects of all papers—not necessarily the exact titles—should be sent in not later than May the first. Brief abstracts covering the essential points must be in the hands of the committee on or before June the first, for advance publication in *Colorado Medicine*. By a provision of the by-laws, no paper may occupy more than fifteen minutes in its delivery.

W. H. CRISP, Denver.

A. G. TAYLOR, Grand Junction.

J. C. TODD, Chairman, Boulder.

TO STANDARDIZE HOSPITALS.

At the call of the Director of the American College of Surgeons, there was held in Chicago, October 19th and 20th, a conference to discuss the standardization of hospitals. This meeting first considered "Hos-

pitals as they are" and "What the profession of medicine wants in hospitals"; and then took up the topics "What to do" and "How to do it". The discussions took a very wide range; but they were all from the point of view, primarily, of the greatest good of the patient. Incidentally, of course, the influence of better hospitals on the work of the staff, the training of interns, the education of nurses, and the general enlightenment of the community on medical matters received a good deal of consideration. But primarily each measure was judged by its probable influence on the good of the patient—would more lives be saved and made more worth living?

As standards for comparing and judging hospitals, size, cost of buildings and equipment, cheapness of administration, class of cases treated, and breadth of educational opportunities offered must all be rejected. There can be but one true universal test applied—the comparison as to efficiency, shown by the proportion of lives preserved and of patients restored to health. When the real facts as regards such efficiency are ascertained, comparison of relative costs, the merits of different methods, what is the necessary or best equipment, can be entered upon.

There is but one basis upon which the real efficiency of any hospital can be judged, and that is the basis of truthful, accurate and sufficiently complete case records. Without such records, the authorities of a hospital cannot themselves know whether good or poor work is being done in their institution; the physician or surgeon, himself cannot know whether he is really doing good or inferior work; and it is quite impossible for any one to find out in just

what respect the work was ineffective, and how it might be made more efficient.

No very elaborate case records are necessary, but it is essential that certain things be recorded in every case. Eight such points were urged, and a card including these was endorsed. If such case records are obtainable, regarding the patients treated in different hospitals and by different men in the same hospital, it will be easy to recognize failures to reach the proper standard; and to run down the causes for such failures, and to remedy them. If the importance of such records is recognized, physicians, surgeons, and institutions that are conscientiously striving for higher efficiency will be glad to keep them. Even the doctor in private practice should realize that some such record of his work, intended only for his own eye, will make him a more efficient, successful doctor.

Important facts were brought out with reference to hospital laboratories. Many otherwise well equipped hospitals are sadly lacking in laboratory room or equipment. Some institutions that have a sufficient material equipment lack experts to use that equipment so as to make it effective. And even when the laboratory and expert are furnished, it too often happens that most of the staff fail to utilize intelligently and habitually the resources for diagnosis and treatment that the laboratory affords.

The hospital has a duty to the sick within its walls. It also has another, and, in the end, a larger duty to the sick that are and will be scattered throughout the community that supports it. This duty is partly met when it comes to act as a center of medical thought and discussion; but more specifically in its training of interns and nurses for their larger service in the community. A hospital that does not seriously consider and endeavor to meet this important obligation to the community at large does not deserve to be supported by private gifts, or public appropriations, or exemption from taxation.

The hospital internship ought to be a very important part of the professional education of each physician or surgeon. One speaker ascribed to it eighty per cent of the doctor's professional value and efficiency. Yet most

members of hospital staffs take very lightly their responsibility for the education of the intern. Most hospital boards give not the slightest thought to the teaching ability of members of their staffs. It has taken the brightest minds in the medical profession, in daily contact with the phenomena of disease, thousands of years to learn the facts and understand the natural laws that go to make up modern medicine; and yet hospital authorities and hospital staffs seem to think they have done their whole educational duty to the intern when they have brought him in contact with a certain number of cases.

The training of the nurse into professional breadth, capacity and efficiency is a new thing. Unguided by precedent and established ideals, and carried on, in most places, without authoritative supervision by any public body, this training lends itself to very gross abuses. The pupil nurse enters the training school to give her services for two, three, or four years for her training. Too often she gets a ridiculously small return for her time and labor. In very many hospitals the duties assigned demand such hours of arduous physical labor that effective study is impossible. The formal teaching arranged is crowded, fragmentary and poorly given. Anything like explaining to the nurse the reason and significance of directions given, is often so far removed from the dignity of a hospital surgeon and the discipline of the institution, that he would be a brave man who would venture on it. The placing on pupil nurses of responsibilities that belong only to older and thoroughly trained and experienced nurses, and the hiring out of pupil nurses so that the fees received for their services may help support the hospital, are other common abuses. Some of these things must be brought to the attention of the general public, and appropriate legislation demanded, to put an end to them.

There are more than eight thousand hospitals in the country. Over one-tenth of our sick are treated in them, and their educational efficiency affects the welfare of all the sick, and of all whose comfort and happiness are involved with the welfare of the sick of every community. It is time that system, proper coordination, and intelligent

supervision were given full opportunity to improve the administration of this vital part of the established institutions of every civilized community. The standardization of hospitals is a timely, important topic, of especial interest to every member of the medical profession. E. J.

THE MEDICAL ADVISORY BOARDS.

The Medical Advisory Boards, of which a list is published on page 49, were nominated by the Governor and appointed by the President to cooperate with and aid the Local Boards in making physical examinations of registrants who are subject to call for military service under the law. These Medical Advisory Boards examine and pass upon only those cases sent to them for an opinion by the Local Board, upon appeal cases and cases transferred from other states or remote districts of this state. Thus they act only in an advisory capacity, their report always being made back to the source from which the registrant comes.

Wherever possible the boards are full boards, made up of a surgeon, an internist, a neurologist, a dentist, and eye, ear, nose and throat, x-ray, laboratory and genito-urinary experts. Small boards, consisting of an internist, a surgeon, an eye, ear, nose and throat man and a dentist, are established in many localities where the formation of a full board is impossible.

It is hoped and believed that this new system will prevent the unnecessary expense to the Government and hardship to the man caused by sending many physically unfit men to the camps, as occurred in some localities under the first draft. Colorado has the proud distinction of having less than one per cent of her men returned from camps for physical unfitness, while in some localities the ratio was as high as eleven per cent. This is a tribute to the care and skill of the physicians who were associated with the Local Boards of Colorado in the first draft and must be a source of pride to the medical profession of the whole state.

Those who are interested in the details and workings of the Local and Medical Advisory Boards, and the problems which con-

stantly confront them, will be repaid by reading "The Examination of Registrants", by M. L. Harris of Chicago, in the Journal of the American Medical Association, January 19th, page 157.

Dr. Harris has conducted the medical examinations of his Appeal Board with his usual thoroughness and vigor, and has in this valuable article given us many points that will be of the greatest use to Local and Medical Advisory Boards throughout the United States. H. G. W.

PAY YOUR DUES PROMPTLY.

The service of many medical men with the army will, for the duration of the war, create more or less financial difficulty in the conduct of our medical organizations. Our state and county medical societies will be deprived of the revenue usually obtained from those members who have gone to war. Upon those of us who are left behind it is therefore more than ever incumbent to reduce official labors and make the financial wheels work as smoothly as possible, by paying our dues promptly, and preferably without waiting to be asked for them by the officers of our respective organizations. In other words, let us display not merely a willingness, but an anxiety, to do our "bit". Incidentally, it would be a good thing if each of us could make it his duty and pleasure to urge into the medical fold all practicing physicians who are eligible but have not yet joined their local societies.

THE ARMY'S VENEREAL MENACE.

Reports from medical officers in the various cantonments showing a startling prevalence of venereal infection among enlisted men have stirred the government to unprecedented action in this matter.

A communication sent out jointly by the U. S. Public Health Bureau and the Council of National Defence to the state boards of health put forward a number of suggestions along the lines of prevention and control. These "essential measures", as they are called, include the formation of state bureaus of venereal diseases, and provide for

the suppression of prostitution, the care of non-diseased prostitutes, and the establishment of venereal clinics. In an attempt to educate the public up to the full importance of the subject, placards and pamphlets of information are to be distributed in various places, and lectures to bodies of employed men and boys, and to fraternal and professional organizations, together with educational exhibits under the auspices of the state boards of health, are to be undertaken. Finally, and probably also the last to be accomplished, the elimination of advertising specialists in men's diseases and of the sale of venereal disease nostrums are included in the propaganda.

The control of prostitution is in itself a problem that dates back hundreds of years and has remained unsolved in all ages and among all the peoples of the earth.

The expense of establishing hospitals for the cure of these patients and the vast problems connected with the establishment of industrial institutions for the care of the non-diseased prostitutes are not easily met.

Among the measures presented by the government some are easy of accomplishment and of immediate possibility. Others would require special legislation, vast funds to combat adverse interests, and years to bring about. Pamphlets and placards and lectures can be greatly utilized to educate the public. The elimination of advertising specialists with their professed knowledge and sure cures would be a great factor, but the attempt would meet with stubborn opposition. The effort to abolish the sale of venereal disease nostrums the manufacturers of which falsely promise great results would likewise meet with considerable opposition. With these two obstacles out of way, however, there would necessarily result a large increase from the present small percentage of venereal patients who present themselves for treatment to the regular profession. In this quarter, at least, some education, some warning, and some timely advice are given to the patient.

To carry out this program with any effectiveness at all will require large appro-

priations and the work of a considerable force of employees under the health board, together with the unstinted support of the drug trade and of the general public.

The Colorado State Board of Health called together on January 24th last, in the state senate chamber, officers of the various county medical societies and the local health officers and county commissioners. Addresses and talks were given and an effort made to stimulate among these representatives an interest in the subject.

A Bureau of Venereal Diseases of the State Department of Health was organized, with the following personnel: Dr. Erlo Kennedy, secretary of the board, ex-officio, and Drs. Sharpley, Hickey and Coffman.

It has been determined that about thirty percent of the men in the army have some form of venereal disease, and while only a portion of these are actually incapacitated for service, one can easily see that the subject is one of grave importance. Unbelievable numbers of men are reported incapable of military service abroad, and hospitals have had to be constructed for the treatment of these cases alone.

The source of infection lies among the civilian population. There rests, therefore, with the "Committee of Civilian Coordination in Combating Venereal Disease" a great responsibility. We are about as well prepared to effectively and promptly combat this plague now as our little standing army of 1914 would have been able to cope with the combined European armies of today. However, we must make a beginning, and no doubt, if sufficient funds, determination and effort are put forth and if common sense and not moral prudery prevails, we shall be able to accomplish something in the way of lessening the venereal menace.

We feel that the time has arrived for a beginning to be made in the control and prevention of venereal disease, but to put completely into effect the program laid down by the government will be about as difficult as the surmounting of any problem that has faced us in connection with the present war.

J. B. D.

THE MEDICAL WOMEN'S WAR SERVICE LEAGUE.

Shortly after our declaration of war the medical women of the country began mobilization. The Medical Women's National Association appointed a War Service Committee which in June, 1917, organized the American Women's Hospitals. Under this caption women were at once enlisted for any available medical service at home or abroad.

By midsummer the General Medical Board of the Council of National Defense had realized that the women were an asset of such value that a Committee of Women Physicians was added to this Board.

Dr. Rosalie Slaughter Morton, who was made Chairman of this Committee, had seen service abroad and had been decorated by the French government.

After England's declaration of war her medical women asked leave to serve and were curtly refused. They did not lack energy however, and it was not long before the Scottish Women's Hospitals were organized and units sent to France and Serbia. These did such splendid work and were so popular with the soldiers that the British government took over one unit and established it at Endell Street, London, as a War Hospital. The woman in charge was made Major and her assistants Captains, Lieutenants, and so on.

These units of the Scottish Women's Hospitals were composed entirely of women physicians, surgeons, dentists, radiographers, nurses, cooks, orderlies and chauffeurs. Their hospitals varied from one hundred to five hundred beds and served in Macedonia and Russia as well as in France and Serbia. In the British Army today are many women doctors who have given invaluable service both at home and abroad with the British Expeditionary Forces.

American women physicians believe that they are as patriotic and efficient as their British sisters but hitherto they have not received government recognition. When our government finally awakes to the value of its trained women, it will find a well organized body of physicians who are registered for service. Every state has been canvassed

and headquarters knows definitely the individual capabilities of all who have replied to the questionnaire of the Committee of Women Physicians.

Last fall the Colorado Medical Women's War Service League was organized, and this League is working in cooperation with the War Service League of the National Association. All medical women of the regular and homeopathic schools are eligible to membership in the League.

It has gathered and shipped nearly one thousand pounds of clothing for infants and children in France and Belgium, has a physical training class for women under the direction of an army captain, and is working for the admission of women to the Medical Reserve Corps.

The Executive Committee is now planning a more extended program which will be presented to the League at its next meeting.

The officers of the League are: M. Ethel V. Fraser, president; Madeleine Marquette Baker and Mary E. Ford, vice-presidents; Mary Reed Stratton, treasurer; Rose Kidd Beere, recording secretary; Mary E. Bates and M. Jean Gale, corresponding secretaries.

M. E. V. F.

THE NATIONAL JEWISH HOSPITAL TO CARE FOR SOLDIERS.

On January thirteenth there was held in the city of New York a meeting of the directors of the National Jewish Hospital for Consumptives. This meeting, an annual affair, might not in itself have been of national significance, had it not been that at the same time and under the auspices of the hospital directors there was called a conference for the purpose of discussing what is at present a most vitally important subject, namely "Tuberculosis and the War".

Those taking part in the discussion were Colonel Derele, representing the French Government, Colonel Bushnell of the American Army, Doctor Hatfield of the National Association for the Study and Prevention of Tuberculosis, Miss Jane Addams, Miss Lillian Wald and others.

In the course of the discussion it was

brought out that the spread of tuberculosis in France, while serious enough, was not so alarming by far as had been reported. The number of tuberculous soldiers in France during the first year of the war, reported by Landouzy to have been eighty-six thousand, was found subsequently to have been less than fifty percent of that number. Unquestionably many cases of the disease which might otherwise not have been known were discovered in the course of routine examination of the soldiers and public attention thus attracted gave rise to the alarming reports spread broadcast.

The same condition prevails in our own country; not that tuberculosis is on the increase, but by the examination of recruits and enlisted men numerous cases are being uncovered that in civil life would only be detected when enough subjective symptoms arose to cause these patients to consult physicians. It is also unquestionably true that some cases will escape detection by the examiners, only to break down after undergoing the training required in the army and navy.

Although some of those present at the meeting held that the outdoor life of the military training camp was conducive to strengthening the individual with a chronic healed lesion of the lungs, it was thought, nevertheless, that our government sanatoria would soon be swamped by enlisted men suffering from pulmonary tuberculosis.

Believing such a contingency imminent, the Board of Directors of the National Jewish Hospital, at the conclusion of the conference, passed the following resolution: "The Executive Committee recommends that the President offers to the Government of the United States the use of the organization and facilities of the National Jewish Hospital at Denver, Colorado, for the care of tuberculous soldiers and sailors, so far as this does not interfere with the work for civilians now being carried on by the Hospital." Should the Government avail itself of this offer, it is proposed to erect on the hospital's spacious grounds enough lean-tos or tents to care for about one hundred and fifty patients.

Another very important resolution adopt-

ed by the large gathering present was to the effect that a foundation should be established for the purpose of carrying on original research work in tuberculosis. It was thought that, without duplication of similar work carried on elsewhere, many important matters upon which differences of opinion now exist among medical men might well be made the subjects of investigation in the altitude and climate of Colorado where the National Jewish Hospital, with its well equipped laboratories and clinical material, is located. S. S.

REST IN TUBERCULOSIS.

Seldom has the oscillation of the medical pendulum been better illustrated than in the alternating employment of rest or exercise in the treatment of pulmonary tuberculosis.

The man who first treated consumption successfully is said to have been Hermann Brehmer. In the last quarter of the nineteenth century he cared for many thousands of tuberculous patients at a sanatorium in the lowest part of a mountain valley. From the sanatorium in all directions through the forest extended pleasant walks alongside which were placed benches only twenty paces apart. Patients were instructed to walk slowly, and never so fast as to become short of breath, and to rest so frequently as to avoid the slightest evidence of fatigue.

On the basis of this system Brehmer has been claimed as an advocate of exercise in tuberculosis; but according to Pratt (*The American Review of Tuberculosis*, Volume 1, Number 11), Brehmer's success was really due to the employment of rest, since the patients who followed his rules obtained more rest in the fresh air than the patients of any other physician of that or earlier periods.

So familiar are we with the idea that in the great majority of cases consumption is a curable disease, that we are prone to forget that until about the middle of the nineteenth century medical authorities generally agreed in regarding the affection as hopeless. After a considerable experience in the sanatorium treatment of tuberculosis, some recent writers have written pessimistically

on this subject. Discouraging statistics are published from a number of institutions concerning the subsequent condition of patients who have been discharged after treatment, and the results in dispensary and private practice are probably even worse as regards restoration to health and prolongation of life. This situation is explained by Pratt as due to failure to realize and insist upon the importance of absolute rest in the cure of pulmonary tuberculosis.

We are reminded that Trudeau, who had learned of the work of Brehmer and of his pupil Dettweiler as early as 1882 from articles in an English medical journal, initiated his Adirondack Cottage Sanatorium upon the basis of the rest treatment; that he declared in his autobiography that he had always been thoroughly in favor of rest and still stood out against the new doctrine of curing people by exercise; and that the rest treatment is today even more insisted upon at Saranac than in the past.

Under the powerful influence of Paterson of the Brompton Hospital Sanatorium, graduated labor has been largely employed as a therapeutic measure both in England and in this country. In some American sanatoria patients with active tuberculosis are put to work within two weeks of their admission, in spite of Lawrason Brown's warning that the treatment is "fraught with grave peril". Pratt quotes as distinctly unsatisfactory the statistics of the Brompton Hospital Sanatorium with regard to the number of patients who continued to be well and working at from one to seven years after discharge. The total number of cases dealt with at the Brompton Sanatorium was much greater than of those reported by Pratt from the Emmanuel Church tuberculosis class in Boston, Massachusetts. Both groups were treated in climates commonly regarded as unfavorable to the tuberculous individual. Of the Brompton patients five hundred and ninety-three, and of the Boston patients forty, were well and working at the end of one year after discharge; while at the end of the seventh year after discharge the number of the Boston patients who were well and working was twenty-one, while the Brompton figure had been reduced to five.

The details of Pratt's method of bed rest include: careful explanation to the patient of the advantages and importance of rest, for which purpose the reading to the patient of the chapter by Lawrason Brown on this topic is recommended; placing of the bed out-of-doors; the taking of meals in bed, the bed being rolled at meal times into a warm room adjoining the porch; and the securing of mental as well as physical rest by keeping down the number of visitors, avoiding excitement, and restricting conversation as well as reading and writing and pastimes such as games and knitting. The value of strict insistence on absolute rest in special cases is illustrated by the fact that fever which has persisted for months in spite of bed rest may cease within a few weeks after forbidding the patient to feed herself or to make any motion of her hands, except to handle the sputum box. The reaction to exercise, begun not less than several weeks after the temperature has returned to normal, and very slowly increased, should be carefully controlled by taking the rectal temperature on the return from the walk and again after fifteen minutes' rest.

AN UNJUST RUMOR.

It is a fact well recognized among medical men that the doctor is not only called upon to do his part on every occasion in kind with every other man, but is further expected to render special service in the line of his professional duty. We buy liberty bonds, subscribe to the Red Cross, to war reliefs of various sorts, in some instances give up remunerative practices to join the M. R. C., and willingly render gratuitous assistance to the families of soldiers in service when so requested. None of the examiners for the draft boards receive remuneration, although their time is very largely given to this work, nor are the civilian consultants on the Board of Aviation Examiners remunerated in any way for the considerable portion of their time which that work requires. And all this is done gladly and willingly, with no complaint, for all desire to do their "bit" in any way they may.

It is right, however, that those who freely

give their time and skill should receive fair treatment at the hands of others. Reports have apparently been circulated to the effect that members of the Aviation Examining Unit were profiting personally by requiring operations upon certain candidates and charging these candidates a fee therefor. No greater injustice could be done, for as a matter of fact the board has gone out of its way to do these operations free of charge in every case, regardless of the candidate's ability to pay for the service. He is given the privilege, it is true, of going to his own physician and making his own arrangements for the work, but should he submit to the operation at the hands of a member of the examining unit no charge is made in any way. At the office of the unit is a signed statement to this effect from every candidate who has been thus operated on, so that there can be no possible question as to the facts.

It is not required or expected of these consultants that they shall render any surgical service, but as the Government makes no provision for taking care of these cases previous to enlistment, the surgeons have taken it upon themselves to correct gratuitously remediable defects in those who have been certified as being mentally and physically qualified in every other respect.

We are glad to welcome the latest addition to the list of official journals of the state medical societies, namely, "Minnesota Medicine". It will be noted that Minnesota has paid Colorado the compliment of exactly duplicating the form of title used for our own state journal, "Colorado Medicine". "Minnesota Medicine" is the twenty-eighth state medical publication issued along ethical lines conforming to those of the American Medical Association. In making his bow to the public, the editor rightly says: "State journals constitute a distinct class in medical journalism, and have certain functions that the many excellent special and general medical periodicals cannot possibly fulfill."

A bulletin issued by the Bureau of the Census, Washington, giving the death rates for the various states for the week ending January 19, shows the highest mortality to have been at Atlanta, Columbus, Memphis and New Orleans, all having more than 25 per 1,000. Denver is fifth from the lowest with a death rate of 11.3, Spokane showing 5.6, Portland 7.4, Seattle, 7.7, and Milwaukee 9.7 per 1,000.

Original Articles

PEPTIC ULCER AND GALLSTONES IN UPPER ABDOMINAL DIAGNOSIS.*

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The stomach is a center around which a multitude of functional and pathologic symptoms revolve. The pathologic conditions which cause the gastric disorder may be due to various lesions, either local, focal or reflex, or they may be due to general infections. Physiologic and pathologic laboratories have done and are doing a great work in clearing up problems in diagnosis. Surgery has been illuminating by dealing at first hand with the pathologic lesions. Roentgenology has given a wonderful impetus to general diagnoses, and in no realm has its influence been more commanding than in the gastric region. Despite all these generous advances, the difficulties that surround upper abdominal diagnosis are so great and varying that interest in its development continues—really grows.

The physician who would reach a modest degree of proficiency in diagnosis must be able and willing to work without wearying. He must acquire proficiency through the experience gained first hand in directed work at our great laboratories, hospitals and clinics. It is less often attained by the clinician who directly leaves his medical college to meet single-handed the pathology of the world.

Again, the clinician must needs have the proper diagnostic attitude. He must listen cheerfully and willingly to the patient's story. The patient may be so acute in his observations as to bring a diagnosis clearly and without travail to you; therefore harken carefully and modestly to what his attending physician has perceived and told. Do not bristle or oppose, and do not attempt to prove the physician inconsistent and incorrect. The observations of the clinician who has attended the patient through an attack

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26 and 27, 1917.

have significance and should be wisely weighed. Of course, one should not be easily misled and make a diagnosis on another man's say-so unless his own mind reaches the same conclusion frankly. Be searching, cheerful and receptive, an attitude which will find a reward.

A working knowledge of surgical anatomy, and this kept clearly in mind when developing a history, carries one a great way toward correct conclusions. To be sure, a proper seasoning of judgment, a moderate, well-directed experience, coupled with an intense willingness to work, is needed.

Another requisite for diagnostic aptness is the ability to think in pathologic multiples. He who can clearly keep in mind the multiplicity of pathologic conditions, and correlate the symptoms as expressed in complaints of the stomach, will most often reach accurate results. When interpreting upper abdominal pain we find a multitude of causes. If we hold in mind only gastric lesions, we may miss the gallbladder, the pancreas, and the kidney. Cardiospasm, duodenal lesions, anginas, and appendicitis, are called "stomach" by the patient. Tuberculosis, cardiorenal disease, syphilis, brain and cord tumors, meningeal irritation and a hundred and one other conditions are all often translated by the patient as stomach trouble and he seeks help for the stomach only. This leads us to consider the value of good history taking. No methods or measures are of more importance to sound and exact diagnosis than the carefully developed history with the proper interpretation and logical correlation of symptoms. The history need not be profuse, but it should cover the facts of inheritance, occupation, accidents, previous diseases, operations, etc. It should carefully include comprehensive details of the symptoms from which the patient seeks relief—when they were first experienced, how shown, where located and what their relation. Also should be noted the time of onset of symptoms, the development of each, which took precedence, their change in order and severity during the time of trouble; and intermissions or remissions should be recorded. Compare the early and late symptoms if they have been

prolonged. These details simply and precisely carried out, coupled with a careful and complete physical examination, leave less to be done by the laboratories, are better form, and bring diagnosis nearer to a scientific basis. Further and very important, no clinical history is complete, and its value is greatly to be questioned, which does not have the stamp of the frank diagnosis of the physician who writes it and who made the physical examination. The clinician should endeavor to leave to surgery, to the laboratories and to the roentgen ray, the stamp of approval only.

Ulcer. In the diagnosis of peptic ulcer let us consider first what the chances are of locating the lesions from the history given by the patient and gathered and correlated by the clinician. We find in our series of histories no symptom or group of symptoms that always warrants ulcer location. If we call all peptic ulcers duodenal ulcers, then we may say our percentage of correct diagnoses is about seventy-five, because seventy-five per cent of peptic ulcers are duodenal. Such a standard would be scarcely honest, certainly not interesting. What we term a rather typically duodenal history gives us about seventy-five per cent correct localizing diagnoses, the other twenty-five per cent drops into what we deem the gastric syndrome. In our histories of gastric ulcer about twenty-five per cent are of the typically duodenal type, thus leaving seventy-five per cent to fall into the gastric type. The histories, then, of one-fourth of our gastric ulcers are as clearly of the duodenal type as are many of the duodenal themselves, and just as clearly are one-fourth of the histories of the duodenal of gastric type. So the clinician who depends solely on the history for ulcer location will often find himself wrong. Neither does pain as to kind, location or severity point clearly. The time of pain or control gives us clear points but not positive evidence. We feel that these varying symptoms do help to a considerable degree, that they are often important indications as to location, but they are only helps; at times they are a good working rule, but by no means a law.

The clinical diagnosis in a series of 2,919

histories of duodenal and gastric ulcer patients (duodenal 2,223; gastric 696), who came to operation, are given here to show our difficulties in locating lesions from a study of clinical histories.

In 64.3 per cent of the duodenal cases a primary diagnosis of duodenal ulcer was made, while 16.5 per cent were put down as gastric ulcer. In about 273 cases (12.2 per cent) gallstones entered largely into the diagnosis. Of these 273, 91 (4.1 per cent of the total) of the patients were sent to operation without test meal or roentgen ray and with no other diagnosis mentioned. At operation many of these patients proved to have the chronic perforating type of ulcer, though others showed only adhesions to the gallbladder.

In 108 (4.9 per cent) of these 2,223 duodenal ulcer cases, appendicitis figured in the diagnosis, while cancer was considered in but 1 per cent. This leaves about .7 per cent unclassified.

Of the 696 gastric ulcers that came to operation, 438 (62.9 per cent) were classified as gastric, 161 (23.2 per cent) duodenal, and in 34 (4.8 per cent) the gastric diagnosis was placed in second position. The gallbladder was primarily considered as the chief offender in 45 cases (6.4 per cent) and in half of these it was the only diagnosis given.

Cancer was considered in 4.3 per cent of the cases, appendicitis in 1.1 per cent, and the unclassified amounted to about 1.7 per cent. If pain, the chief symptom, is considered alone, and the time of its appearance is the guiding factor, we find that in 50 per cent of gastric ulcers there is pain beginning from two to five hours after meals, and in the other 50 per cent before two hours. In duodenal ulcer, there is pain in 75 per cent beginning from two to five hours after eating, and in the remaining 25 per cent, before two hours.

Points that may aid in a clinical differentiation of gastric and duodenal ulcer. Duodenal histories have a longer course in years (11 per cent) than do gastric, perhaps in part because there is less chance of latency when they are situated in the duodenal area. The longer the history the more likely

is the ulcer to be duodenal. The higher the acid, the lower the ulcer. Hemorrhage is oftener present in gastric ulcer. More duodenal ulcers than gastric ulcers are diagnosed as gallbladder trouble. Position (reclining) and pressure-ease are more indicative of gastric than duodenal ulcer. Night pain is more frequent in duodenal ulcer. Ease before the next meal occurs more often in gastric ulcer. The higher ulcers seem to run shorter attacks, are repeated oftener, or with only remissions; so they run month by month, the pain earlier, without the constant decided food and soda ease, and symptoms varying with the amount and kind of food. So, too, in high ulcers, small amounts and bland food may give ease while larger amounts or heavy food disturb and give immediate pain. In low ulcer the large meal offers more chance of ease. With the high ulcers there is oftener regurgitation of hot burning water, sour hot water, or a salty liquid running from the mouth, than with duodenal ulcers. Bloating and pressure occurs more frequently in gastric ulcer. High-ulcer pain is farther up and more to the left. Coarse foods and large amounts of food are more apt to cause distress in gastric than in duodenal ulcers and more in large ulcers than in small. Deeply undermined duodenal ulcers are often much like high ulcers of large area. Continuous symptoms are four times more common in gastric than in duodenal ulcer. The size of the ulcer seems to have quite as much or more influence on symptoms than has the position. Small ulcers with high location often give clear-cut duodenal ulcer history. Large ulcers wherever situated give shorter food ease; they tend to constant symptoms; more remissions than intermissions; food is more apt to give immediate distress, and the patient is easier with the stomach empty. These ulcers lose type.

To the history taker the difficulties of ulcer location are great. Indeed, he hesitates and should hesitate, because there is little reason to believe that pyloric ulcers vary much in symptoms from ulcer in the duodenum. The symptom variations do point to ulcer location, but they give no hard and fast lines. Hence we feel that the physician who can locate all or most peptic ulcers by

clinical symptoms only has developed much more accuracy than we have attained. The roentgen ray does locate the disease whenever its findings are positive; therefore its influence is striking and it has the exactness that the clinical histories lack. But the x-ray has its difficulties, and we need all our combined forces to make a respectable showing. We see no great benefit to the patient in such exact localization so long as the peptic lesion is diagnosed and the patient gets proper medical or surgical attention. Only it is a comforting sort of feeling when later the x-ray or surgery proves the accuracy of one's observations.

Symptomatology. In the majority of instances the early history of peptic ulcer is clear-cut and definite, and is typically given by the patient in the twenties. There are attacks of pain, pressure, burning or a strange nervous weakness that comes from three to five hours after meals. Most often in the early period this pain, distress or weakness is the chief or only symptom. Some gas, some sour eructations may be complained of, but both are usually slight in the early stages. Vomiting is rare, but may be a factor. The patients have good food desire, even may have increased appetite, and many do not lose weight unless advised to diet or, finding that care in diet lessens late pain, they undereat. However, this great increase of pain due to food is usually seen later in the disease. The symptoms above given usually appear without cause known to the patient; they are often seasonal, spring or fall, though hard work, worries, and any indiscretion are sufficient to initiate an attack. During the period of attack the symptoms appear regularly from two to five hours after meals and frequently at regular nightly intervals, varying slightly only in each instance, and continuing until the next meal or when food is taken. Alkalies, drinks, vomiting and irrigation ease, when resorted to, but usually food is the great remedy in early life. The time of pain is characteristic and with the pain run the other symptoms when present. The average time of pain appearance is about three hours after food. The time of pain and its control are almost pathognomonic. By this

we mean the pain that comes from one-half to five hours after meals and is eased completely by the next meal, to appear again in from one-half to five hours—this is the characteristic feature. Quantity and quality of food may vary the time of pain but not destroy the character. When one symptom disappears, all disappear. Diet, rest, recreation, or change of climate or vocation may relieve the attack. It usually lasts from a few days to weeks and is quite identical in symptoms day by day. The interval comes and complete relief is experienced. As time goes on the attacks become more severe, perhaps oftener and more prolonged. Greater amounts of food increase the after-coming pain, and quality makes a difference. Patients find that care in diet lessens suffering and many lose weight because of undereating. In this stage we get a history of greater or more prolonged pain, more gas and sour, bitter eructations and often more or less vomiting. Food still gives relief in most cases, and alkalies, irrigation and vomiting give more comfort and are more often used to bring relief than in the first stages. Vomiting or passing blood may be a factor in diagnosis, but a diagnosis of ulcer should be made without the evidence of hemorrhage, as a diagnosis of gallstones should be made before jaundice, save in those cases in which hemorrhage is the first or only symptom of ulcer, and jaundice the first and only symptom of gallstones. In this stage the symptoms, their time of appearance and control, are still usually clearly defined and a diagnosis may easily be reached.

Still later, when complications have arisen, perforations, adhesions, large ulcers, contractures, obstruction and the like, the symptoms may take on varied hues and we are at a loss, unless we have been careful to get our early definite history. The symptoms now may be greatly prolonged, never quite clearing up, or they may be continuous, with gradually increasing invalidism. Pain increased or not eased by food, food soon adding to distress, sour, bitter, burning eructations and vomiting of large quantities, loss of weight, decided obstruction and cachexia may be present. Vomiting, irrigation,

and alkalies usually bring some degree of ease. The history is always that of stomach and we can usually by exclusion reach a respectable diagnosis. The early history is here a great illuminating factor and the roentgen ray is a comfort, as it is, indeed, in all the stages of peptic ulcer.

Such a history, more or less modified in each case, gives us evidence to warrant a clear diagnosis of peptic ulcer in 80 per cent of cases, while in another 9 per cent the diagnosis of ulcer figures strongly, with gallstones, appendicitis, or cancer not always clearly differentiated. It must not be forgotten that latency of ulcer as well as latency of gallstones is to be considered when clearing up our diagnostic statistics. Certain it is that both may be latent for years even, and discovered only at operation, by the roentgen ray or at autopsy. In ulcer the first and only symptom may be hemorrhage, more or less severe and repeated, or the pain of perforation may be the first warning. Again, symptoms of decided obstruction may first come to attention and thus the late complicated history is ushered in, never in any period possessing the early signs, or showing them so little that the patient had not made complaint or sought relief. The clinician who carefully bears latency in mind may reach happier conclusions, and the surgeon who gives this point attention will be safer to trust and will get better results. The late complicated stage of ulcer often loses its type and merges into the signs of any gastric disturbance, which may be due to lesions outside, to focal infection, or to general diseases, yet careful, detailed histories clear up many difficult cases. The early history brings other evidence, while the x-ray may add still further light.

There is a class of ulcer cases not so large but quite distinctive and extremely difficult to diagnose. Clinically they are diagnosed gallstones. These ulcers are often duodenal or pyloric but may be gastric. They seem to have no complication save frequent perforating tendencies, yet a part are not so reported at operation. Often the only symptom complained of is sudden, acute short attacks of epigastric pain, rarely with ra-

diation, but which may radiate to the back if posterior perforation is impending. Recovery from pain is usually sudden and complete, typically gallstone in character and no other rational diagnosis can be made save by the aid of the x-ray. In the group of cases under discussion the roentgen ray and the surgeon must disclose the condition, or, when no operation is done, characteristic symptoms develop later. In the larger group of chronic, complicated ulcer cases with perforation the early history often gives the solution.

Gallstones. There is a train of symptoms quite peculiar to gallstone disease. In cholecystitis the symptoms may quite simulate cholelithiasis, or, again, vague symptoms only may point to the liver, while the gastric disturbances predominate. The large majority of attacks, however, are rather easily diagnosed. The symptoms are made up of practically the same elements as in ulcer—pain, gas and vomiting, chronically periodic in a sense—but the grouping is quite different. Here the symptoms appear in acute attacks of short duration, usually from a few moments to hours, but one such attack is the rule with an intermission of hours, days, months or years of normal health, if the case is a simple, uncomplicated one. The attack comes suddenly, often without any warning. Quite as characteristic as this suddenness of onset is the abrupt cessation, even at the height of pain, followed by immediate return to health. Pain is the great and constant symptom. It is more often epigastric, though it may radiate to the right arch and to the back. The chest and abdomen may be included in its severe grasp. It is boring, pressing, “a queer agony” often expressing the sensations, or it may be lancinating, severe and terrific, approaching the pain of gastric perforation. Spasm of the diaphragm is marked in severe cases, but may be slight or absent in the less severe attacks. Pain appears without relation to food in the greater number of cases, coming before meals, after meals, or when abstaining. It is quite independent of food, not caused or relieved by food in the majority of cases, and the patient rarely speaks of food in relation to pain.

The gas present intensifies the distress, as belching often gives short relief, but the bloated, distended, bursting sensation that so many patients experience is due to the character of the pain, its field of radiation and the spasm, rather than to the actual gas present. Vomiting in uncomplicated gallstone cases is quite as infrequent as in cases of uncomplicated gastric ulcer. It comes at the height of pain, consists of green or yellowish fluid, usually small in quantity, and gives short relief, or permanent cessation of pain may follow it. It is usually not prolonged and, unless food is present, is not copious.

Two smaller classes of quite distinct cases should be mentioned. The first is exemplified by rather mild digestive disturbance often considered lightly by both patient and physician. There are slight attacks of distress from gas or pressure, coming oftēnest at irregular times, but again with some relation to food. These are of sudden onset, short duration, and eased by eructations of gas, or, slight regurgitations or vomiting. Again they pass off almost unnoticed without great disturbance or any treatment. The usual return to health is noted, as in our typical class, and these dyspeptic mild attacks are just as characteristic of gallstones as are the severe attacks which usually supplant the mild. They are of the same type, yet the one is named gallstones and the other dyspepsia. The other class of cases is that of chronic gallbladder trouble with adhesions, duct obstruction, perforations, duct infections, contraction and perhaps pancreatitis. When this condition obtains, chronic gastric disturbances often are foremost, the acute pain is like chronic gastric perforation and the whole picture is so closely that of chronic ulcer with perforating complications, that a differential diagnosis cannot be made if only the present symptoms are considered. The key to diagnosis lies in developing the early history which often clearly shows the early clear-cut ulcer syndrome or the typical train of gallstone symptoms. However, this differential diagnosis is not now the important point. These patients are essentially surgical, and a surgical diagnosis

and an experienced surgeon usually set things right.

If we understand the regular characteristics of the period of attacks of ulcer, the day-by-day symptoms, coming from two to five hours after meals, and eased by food, drinks, alkalies, vomiting or irrigation, and if we as clearly recognize the irregularity of the gallstone attack, not due to or eased by food, suddenness of appearance and disappearance, and the perfect health until attacks recur, hours, days or months later, we shall have arrived at a state wherein we may easily diagnose 80 per cent of ulcer cases and about 86 per cent of gallstone disease.

The following considerations may help when doubt exists and symptoms mix: The percentage of perforation in chronic ulcer is quite large (twenty-six), and it is in this group we find our greatest number of errors. We call the cases gallstone disease or at least partly divide the diagnosis with gallstones.

Jaundice is frequent with gallstones (25 per cent) and hemorrhage in ulcer (25 per cent). Vomiting is not common in either condition early. It is bitter and greenish-yellow in gallstone disease; in ulcer it is clear and sour or a clear, tasteless or salty fluid coming up as an eructation. Late, it is more copious in ulcer, more often contains blood, though in the latter condition the symptoms of vomiting help but little in differential diagnosis. A rapidly developing constipation is a clear-cut symptom in ulcer, not in gallstones. This is especially true in men. Food remnants and bacterial elements found on irrigation are an ulcer sign, more rarely found in gallstone disease.

Ulcers are most common among the young, or, perhaps, better, histories of chronic ulcer lead us back to the early life of the patient. When other things are equal so far as symptoms are concerned, and a question of gallstones or ulcer arises, let the date of first symptoms decide. If symptoms began when the patient was young (15 to 25 or 30) let the diagnosis of ulcer be favored; if in late life, give that of gallstones the preference. Latent ulcers are not so

apt to be carried over into late life as are latent gallstones.

When attacks come two or more times a day, repeated in a measure day by day, without food relation, even when acute, like gallstones, guard carefully the diagnosis. It is much oftener ulcer with perforation than gallstones. With gastric symptoms attendant, yet not quite surely ulcer, go back for aid in your histories to the early period of attacks.

With pain repeating acutely night after night, with more or less constant distress along with other gastric symptoms, call it ulcer, unless chills, fever, or jaundice make gallbladder affection probable. If a patient from 35 to 50 years of age has had digestive troubles for years and has not developed jaundice, fever, chills, or a large liver, diagnose ulcer, especially if the acids are high.

In general, acids are higher in ulcer than in gallbladder disease and aid in diagnosis. Usually a history that early is typical of ulcer or gallstones may later be too irregular for a diagnosis; thus we learn to depend on early symptoms. In the presence of perforative symptoms the clinician is quite apt to lean, at least secondarily, to a gallstone diagnosis, even when the symptoms are prolonged and many of them are clearly of ulcer. In prolonged spells, with burning attacks daily, ulcer, not cholecystitis, is the rule. When there is a faint, weak feeling with an empty stomach; which is even slightly relieved by lightest foods and drinks, diagnose ulcer even in the presence of other formidable symptoms. The pain of ulcer is more apt to radiate low than is that of gallstones; rarely is gallbladder pain low. With sharp gallbladder-like pain preceded for a time by indigestion, consider first ulcer with perforation.

Work, worry and fatigue often initiate an ulcer attack; rarely do they excite one of the gallbladder. Pressure, position and reclining may ease ulcer pain, rarely gallstone pain. Acids have a value. With prolonged spells, pain, vomiting and other things equal, the higher acids point to ulcer.

Pain that comes immediately or soon after food, with little or no food or soda relief or but transitory relief, does not make an ulcer

history clear enough for diagnosis, but appendicitis and cholecystitis might be considered, though not urged.

With varying spells of short (three days), irregular food distress or pain, no appetite, even with gas belching and vomiting and good acid content, look out for appendicitis. Appendicitis gives a gastric history or gastric symptoms but not an ulcer syndrome.

Young patients usually have clear-cut peptic ulcer histories or symptoms that seem clearly like gallstones but are really ulcer (perforating). Complicating difficulties are more often seen later.

Nausea is not a common ulcer symptom. A patient with ulcer vomits because of pain, burning or distress. Nausea may come later, and frequently occurs when vomiting is enhanced, due to adhesions, contractions and obstruction, but usually in ulcer, vomiting is not associated with great nausea. Nausea is frequently met in gallstone disturbance and may be intense, though it is oftener caused by extrinsic disease other than gallstones (appendicitis, tuberculosis, etc.).

Many diseases give gas, sour stomach, eructations and vomiting, therefore soda ease must find other corroborative evidence to weigh heavily in a diagnosis of ulcer.

Another point to be held clearly in mind by both clinician and roentgenologist is that when there are many inflammatory adhesions about the gallbladder, pylorus and duodenum, there is often deformity and obstruction to mislead the roentgenologist, and quite enough to give decided gastric symptoms. Then if the gallbladder is the real lesion we may have added the dyspeptic symptoms thus induced and the whole picture will be clearly that of ulcer, both from the standpoint of the roentgen ray and the history. Such diagnosis is warranted; it is the logical one, and reflects on none of those who make it.

The x-ray lessens such errors in diagnosis when the clinician turns to it for help. If symptoms are properly interpreted, if the roentgenogram has been skillfully read and both findings wisely correlated, a fewer number of ulcer cases will slip by on a gallstone diagnosis.

The roentgen ray is the great modern

boon to gastric diagnosis; the real comfort to the clinician who plods along, discussing histories, and no one should appreciate its value or its limitations half so much as the clinician. Roentgenography has its limitations, but it opens up a wonderful field of possibilities. It has improved gastric diagnosis, it has stimulated the writers of clinical histories to better service. Who has not determined to do more careful history writing, interpreting and correlating when the x-ray has upset the diagnosis? What clinician has not felt the great relief of certainty when the ray has shown a lesion after the history had failed to get the coveted symptoms? And, too, when the history has been clear and the ray has located the lesion, who has not felt that comforting assurance that he could approach his patient quite fully equipped to advise treatment, readily, more willingly and more completely? A closer cooperation between the roentgenologist and the clinician will mean a better interpretation of symptoms and methods, and a clearer correlation of all. Indeed, this close cooperation promises such advances in the near future that gastric diagnosis will have less for which to apologize.

THE ROLE OF THE DUCTLESS GLANDS IN OPHTHALMOLOGY.*

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That the eye is influenced by the secretion from the ductless glands, we know; but just how, when or what changes are produced in each case, we do not always know so well. Likewise we know relatively little concerning the chemistry of the internal secretions, in spite of the fact that our knowledge of this subject has increased tremendously during the past decade. This subject should receive more consideration from ophthalmologists than it does, in order to classify the etiology, symptomatology, diagnosis, prognosis and treatment, even though we are dependent upon physiologists, physiological chemists and other laboratory experts for our basic knowledge.

The literature of the past ten years con-

tains many valuable articles upon this subject and the author has reviewed many of these, especially those appearing in ophthalmic journals. Notable among these, during the past year, are those by Lamb, Lisser, Schirmer and Zentmayer. However, to give due place to all would make a book, even upon the hypophysis alone. It is needless to state that in the brief time allowed me such a discussion is impossible.

If we could be sure in any given case, from the eye symptoms alone, or even from the general symptoms, that we were dealing with hyper- or hyposecretion from this or that ductless gland, singly and unmodified by other glands, the problem would be greatly simplified. Fortunately or unfortunately, as the case may be, nature does not, as a rule, prescribe such an easy task, because over-abundance of secretion from one gland is apt to be followed by the same condition in another gland as Lamb and others have mentioned. The result is stimulation of the sympathetic nervous system, especially in the incipient stage of hypersecretion from the thyroid, and later stimulation of the autonomic or vagotonic system from the thymus and posterior pituitary.

Inasmuch as many of these cases consult an oculist first, either because of headache or predominating eye symptoms in the early stage of their glandular disease, it behooves us to be on the alert and to remember, as Grünwald has so tersely stated, that "we are physicians first and specialists second".

Thyroid.—The sympathetic system is stimulated by secretion from the thyroid, circulating in the blood and lymph. In cases of slight hypersecretion from this gland, in which the secretion is not reinforced or antagonized, we see a transitory dilatation of the pupils combined with slight widening of the palpebral aperture. Thus early in the disease we might not suspect thyroid, but we should do so, especially in women whom we are inclined to designate as neurotic. According to Noyes and many others, goitre occurs with much greater frequency in women than in men. If this stimulation is continued over a long enough period of time, Kocher's or Rosenbach's (Hoeman's)

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or even Stelwag's signs appear. As the disease becomes more definitely established, Gifford's and von Graefe's signs appear, leading ultimately to the clinical entity known as Graves' or Basedow's disease. By the time exophthalmic goitre is well established, there is hypersecretion from the adrenals as well. In fact, at this stage of the disease the symptoms are produced by secretions from several of the ductless glands. For instance, if the blood contains secretions from the thymus or posterior pituitary, the pupils will be smaller than in the early stage of thyroid hypersecretion.

The following are the commonly recognized ocular signs and symptoms of exophthalmic goitre:

1. Knies' sign is manifested by dilated and, often, unequal pupils. However, there is retained reflex activity. This is due to stimulation of the sympathetics and is quite often present in the early stage of goitre. According to Lamb there may be associated with this a low grade chorioretinitis of the macula and ciliary congestion. He believes this is worse in the eye with the more widely dilated pupil.

2. Von Graefe's sign, which consists in lagging of the upper lid in looking down.

3. Gifford's sign, evidenced by difficulty in everting the upper lid. This is due to retraction and rigidity and often occurs early in the disease.

4. Dalrymple's retraction of the upper lid with widening of the palpebral aperture.

5. Mueller's sign, which is the same as Dalrymple's except that he includes the lower lid.

6. Next comes Hoeman's or Rosenbach's sign of tremor of the upper lid.

7. Stelwag's diminished frequency of winking often followed by a rapid succession of winks or a long interval without winking.

8. Retraction of the upper lid while an object is being fixed is Kocher's sign.

9. Joffroy's is present upon failure of the forehead to wrinkle when the head is lowered and the patient looks up.

10. Aschner found that the pulse can be made slower by pressure upon the eyeball.

11. Loewe believes that adrenalin dilates the pupil in such cases.

12. Berger has called attention to lachrymation as an early symptom of Graves' disease. He believes this is due to stimulation of the sympathetic. Schmidt-Rimpler, on the other hand, believes this is due to irritation of the conjunctiva, as a result of the exophthalmos.

13. Jellinek and Rosin have noted the early pigmentation of the lids which later disappears.

14. Sattler and Gifford have each mentioned a solid-looking thickening immediately beneath the eyebrow and the latter author states this is found early and without marked exophthalmos.

15. Möbius noted a deficiency in, or even a complete loss of convergence power.

16. Sattler has attributed the occasional falling of the eyelashes and eyebrows to trophic disturbance.

17. Becker found spontaneous arterial pulsation of the retinal arteries in six cases out of seven of this disease.

18. As a new ocular symptom of exophthalmic goitre Suker has described a "deficient complementary fixation in lateral eye rotation" as follows: "After extreme lateral rotation of the eyes to either side with the head fixed and with fixation of an object at this point maintained for a second or two, on attempting to follow this fixation point as it is rapidly swung into the median line, one of the eyes (it may be either) fails to follow the other in a complementary manner into proper convergence and from this point when it is brought into the median plane. Either the right or left eye makes a sudden rotation into the fixation with its fellow, but before it does so, an apparent divergent strabismus is manifested." According to Suker, it is no doubt due to a dissociation in the functions of the sympathetic and the extra-ocular motor nerves of the eye, and perhaps also to exhaustion on extreme lateral rotation of the eyes.

19. Ocular bruit has often been mentioned as a symptom and has been discussed at great length many times.

20. A very infrequent symptom is ocular nystagmus.

Parathyroids.—Insufficiency of the parathyroid glands may be responsible for zonular cataract and for eclampsia, convulsions of childhood and epilepsy. Tetany may also occur.

Pineal Gland.—The secretion, if there is any, from the pineal gland does not seem to have any effect upon the eye. It is possible to explain all of the eye symptoms present, when there is hyperplasia of this gland, upon the basis of pressure and it is reasonable to assume that this is the only way in which eye symptoms are produced. However, Oppenheim believes that the symptoms from this gland are similar to those from tumors of the corpora quadrigemina. With disease of the pineal, the third, fourth and fifth nerves are not involved so often as when the corpora quadrigemina are diseased, but nystagmus is more often present. Frankl-Hochwart has expressed the opinion that tumor of the pineal body is responsible for unusual height, obesity, drowsiness, excessive growth of hair and a premature genital and sexual development associated with precocity of adolescence.

Thymus.—In marked contrast with stimulation of the sympathetic by thyroid hypersecretion is stimulation of the vagotonic or autonomic system by hypersecretion from the thymus. Under such circumstances we find contracted pupils, narrow palpebral apertures, esophoria, spasm of accommodation, deep ciliary congestion, and chorioretinal and scleral disturbances of circulation.

Persistent hyperplasia of the thymus was found by Garré in 95 per cent of fatal cases of exophthalmic goitre. Von Haberer obtained remarkable improvement in a patient whose condition was very serious following a thyroid operation, by removing part of the thymus. According to Halstead's recorded cases, thymus feeding, radium and Roentgen-ray treatment improved remarkably patients who had not been benefited by thyroidectomy and ligation of the thyroid arteries for exophthalmic goitre.

Lamb says: "The more chronic inflammations may usually arise in conjunction with vagotonia, but such a condition as

simple glaucoma is probably the end result of gonadal and adrenal insufficiency. Whereas acute inflammatory glaucoma is probably the result of a sudden imperative demand upon the adrenals for secretion to sustain the body in its attempt to defend itself against shock, fear, etc., in the presence of gonadal and adrenal insufficiency; for, although the secretion is forthcoming for a short period, the inability to continue to supply it causes a precipitate lowering of sympathetic tone and throws the balance under the control of the vagus. This, of course, in the presence of predisposing factors, such as highly hyperopic eyeballs and other anatomic abnormalities.

"This idea of the etiology is substantiated by the fact that pilocarpin and adrenalin, by hypodermic injection, overcome the attack; and, furthermore, stimulation to the sympathetic is well known to be always beneficial".

Bruner had his suspicions aroused concerning the pituitary in a patient requiring a frequent change of lenses with the result that an early diagnosis was made and an early operation resorted to with a good result.

Adrenals.—It is now, I believe, a well recognized fact that hypersecretion from the adrenals stimulates all the other ductless glands as well as the sympathetic system. Hypodermic injection of adrenalin seems to have the same effect as stimulation of the sympathetic nerve endings over the entire body. Adrenalin also produces contraction of the pigment cells in the skin and probably in the retina of the frog just as stimulation of the sympathetic does. However, the pituitary secretion seems to have a direct effect upon the blood vessels and not upon the sympathetics.

Pituitary.—Bitemporal hemianopsia is present as a late symptom in hyperplasia of the hypophysis in about 40% of the cases, but is a symptom for which we should not wait before making a diagnosis. The fields, according to Cushing, may early show a slight contraction from pressure of the pituitary upon the chiasm, and homonymous hemianopsia is by no means uncommon. In the absence of acromegaly, Uhthoff believes

homonymous hemianopsia is very rare. Other authors have reported superior temporal slant of the peripheral field, scotomas and hemichromatopsia. Cushing ranks the ocular signs and symptoms as the most serious disturbance from the disease and these are not always in proportion or direct relation to the enlargement of the sella turcica. Neuroretinitis and optic atrophy are almost always late symptoms of the disease, although the former may occur quite early. Paralysis of the third nerve occurred in fifteen per cent of the cases tabulated by Uthoff. G. E. de Schweinitz has called attention to "antecedent amblyopia" as a very early and probably not a constant symptom of disease of the pituitary. This precedes other demonstrable ocular signs and symptoms.

One of the very best articles I have found on the ductless glands from the internist's view point is by Dr. George Dock, of St. Louis, and appears in Osler's Modern Medicine, 1909, part 2, under the title "Diseases of the Ductless Glands". He gives due importance and place to the ocular symptoms.

Ott and Scott state that the secretion from various ductless glands produces hypersecretion of adrenalin into the blood; i. e., the thymus, thyroid, parathyroid, pancreas, pituitary, testicle and ovary have this effect. The reverse is equally true. Lissner and many others have emphasized the fact that very rarely do we see the result of disturbed or altered secretion in only one gland.

Cases. The three following cases may be of interest:

1. Mr. G. W. M., age forty-four years, banker, first consulted me February 21, 1912. He stated that at nine years of age he lost his right eye from an injury, but that it was not removed until three years ago in Iowa because of sympathetic ophthalmia in the other eye. Recently, his vision has been failing, so that it was reduced to 15/20— and J. No. 2.

The patient is unusually fleshy; his face "looks flabby"; his lids droop, are edematous and the edges hyperemic; the eyelashes and eye-brows are brittle. Cerebra-

tion is quite slow. In fact, he states it is quite difficult to think.

Examination of the anterior segment of the left eye revealed a slight pericorneal injection of the scleral vessels; the cornea, iris and aqueous were hazy; there were a few posterior synechiae; and very fine deposits on Descemet's membrane.

The fundus was negative except that the disc looked quite pale even through hazy media, and there were a few fine dust-like opacities in the anterior portion of the vitreous.

The field was concentrically contracted for colors, although the form field was negative, but there was no evidence of temporal hemianopsia.

The diagnosis of serous iridocyclitis associated with hypothyroidism must be evident from the symptomatology. Dionin and atropin were used locally and thyroid extract internally; the latter was prescribed by his family physician. He improved slowly but steadily under this treatment with a return of good vision and good general health.

As I see this case now, I believe the hypophysis, as well as the thyroid, was diseased, but, without an x-ray of the sella turcica, positive conclusions are less certain, although an x-ray examination could of course have been negative with disease of the pituitary. Beck has reported a case in which the hypophysis was found quite large postmortem, as he expected from his clinical findings, but in some respects the case bears a striking resemblance to those of hypothyroidism formerly called myxedema.

2. Mrs. V. D., age thirty-two years, married, complains of having had headache, slight nausea and prominence of the eyes for the past year. V. O. U. 15/15—1 and J. No. 1. There was noticeable exophthalmos of O. S. and more of O. D. with increased injection of the ocular and palpebral conjunctival vessels. Von Graefe's, Gifford's, Möbius', Knies' and Stelwag's signs of exophthalmic goitre were present. The fundi were negative.

Under a cycloplegic V. O. D. 15/30 minus = 15/10 + 1.00 combined with +0.50 ax. 95; V. O. S. 15/30 minus = 15/10 × 1.00

combined with $+0.50$ ax. 80. She was given a full correction for constant use.

Organotherapy, prescribed by her family physician, has produced lessened exophthalmos and an improvement in her general health. As all her symptoms are mild, operation has not been advised.

3. While this paper was being written a third patient, Mrs. H. T. T., age thirty-three years, married, presented herself for examination with more than a moderate palpable enlargement of both lobes of the thyroid. She gave the usual history of asthenopia and neurasthenia. Her mother and one sister each have a goitre.

The anterior segment of each eye was normal and V. O. U. 6/6— and J. No. 1.

Under a cycloplegic V. O. U. $6/7.5+ = 6/4 +0.50$ Sph.

The fundus of each eye showed a low grade chorioretinitis which may be due to her hyperthyroidism, as her family physician has failed to find anything else in her general health to account for this. However, this was near the disc on the temporal side and did not involve the macula. In fact, I have not found involvement of the macula often.

There was a slight deficiency of convergence, but with so little hyperopia I advised against the wearing of lenses. This patient had been treated systematically by organotherapy without improvement, and, as two competent general surgeons had advised an operation for goitre, I concurred with their opinion.

In conclusion, kindly permit me to emphasize the importance of the low grade chorioretinal changes in exophthalmic goitre or thyroid hypersecretion, as I believe these are too often overlooked. Too many observers probably expect to find grosser lesions. These changes may be due to the fact that too much light is permitted to reach the macula, as Lamb states he finds these more marked in the eye with the more widely dilated pupil, but I believe it is just as reasonable to assume that the stimulation of the sympathetic is the cause. Perhaps it is both. We in Colorado should have a better opportunity to study this, on account of our excessive light, than our more distant con-

frères, if the former assumption is correct. If the latter is true, the increased pigmentation of the lids, which occurs early, may occur simultaneously with the chorioretinitis.

Physicians' Building.

GENERAL PHYSIOLOGICAL RELATIONS OF INTERNAL SECRETIONS.*

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There appears to be no important specific action of any internal secretion on the eye, in the sense that atropin is a mydriatic or eserine a miotic. But as the eye is a tissue complex in physiological relation with all the rest of the body, internal secretions operate on its tissues as they do on similar elements throughout the organism; and as a part of the organic whole the eye must be affected in its functions and nutrition by what goes on elsewhere.

I will therefore devote the few minutes allotted to me to a consideration of some of the general physiological relations of the internal secretions. We find here, as in so many other fields, evidence that there is no such thing as narrow specialism in ophthalmology, but that the well equipped eye doctor belongs to that group which "knows everything about something and something about everything".

It cannot but be useful for us to evaluate the position of these mysterious ductless glands in the economy. I well remember the day of relative positivism in physiology; when the mechanism of the reflex arc was the key to all nervous activity; when the combustions in the colorimeter seemed to be the last word in the explanation of protoplasmic energy; when nutrition concerned only the metabolism of compounds of carbon with a little sulphur and phosphorus, salts and water, and there were no vitamins. I remember that when Brown-Séquard announced the vivifying effects from the injection of testicular juice he well nigh shattered a hard earned reputation as a safe and accurate physiologist.

Now we are ready to believe that if the

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external secretions prepare the food for the metabolic activity of the cells, the internal secretions prepare the cells not only for metabolism of the food but for all their recon-dite physiological relations.

For long years the lecturer on physiology had been introducing the unicellular amoeba as an integration of all physiological functions; and then he proceeded to show how, with the differentiation of tissues in the multicellular animal, there was a physiological division of labor so that in the higher forms of life autonomous mechanisms were coordinated only through the fixed channels of nervous impulses.

It seems to me it was an advance comparable in importance with Harvey's discovery when, in 1902, Bayliss and Starling showed that an acid extract of the duodenal or jejunal mucous membrane, when injected into the blood of an animal, caused its pancreas to secrete. They proved that the active principle, which they named "secretin", resided in the intestinal epithelium in an inactive condition (pro-secretin); that wetting of the mucous membrane with dilute hydrochloric acid, or the acid chyme, activated the pro-secretin into secretin; that this product is soluble and is not discharged into the intestine but into the blood; and that the blood so charged, reaching the pancreas, causes this organ to secrete. Furthermore, it was found that secretin retains its properties after boiling. It is not an enzyme. Starling looked on it as a type of specific substances which, produced in one organ, reached another through the circulation and made the latter act; and he gave to this type of compound the name "hormone" from the Greek word meaning "to excite".

Every organ of internal secretion undoubtedly gives off an analogous chemical body. In the case of the adrenals the active principle has been shown to have a definite chemical formula, to submit to crystallization, and the same has recently been proved by Kendall for a product of the thyroid gland, and by Robertson for his tethelin extracted from the hypophysis.

An illuminating discussion of the vital relations of the whole group of internal secretions, under the title of "Hormonic Equilib-

rium" was one of the evidences of great capabilities given by the late Henry S. Denison, who was cut off at the beginning of a most promising career some three years ago.

It is not too much to say that, though our knowledge of internal secretions and of the class of reactions which they set up is certainly but a small fraction of the truth, we must conclude that, directly or indirectly, internal secretions are involved in every vital act of protoplasm, and Cannon has shown that they must be considered as a physical basis of emotions if not of all physiological activity.

It is universally admitted that each gland of internal secretion produces a definite chemical product which enters the circulation and modifies the action of various cells in specific fashion. There are two ways in which modification of this secretory function may bring the ductless glands within the purview of the pathologist and clinician, first through hypersecretion, second through hyposecretion. Both may be equally disastrous, and each involves its own pathological changes. But there is a respectable opinion that ductless glandular disorder is not simply quantitative in its influence, but may be essentially qualitative. That is, that there is a perversion in the chemistry of the diseased glandular secretion, which deprives it of useful function and makes it distinctly poisonous to the body in any concentration.

There is a fourth view of the origin of dyscrasias dependent upon glandular disorder aside from the secretory function. There is reason to believe, namely, that the ductless glands are specifically detoxicating organs necessary to the neutralization or destruction of poisonous matters added to the circulation as the result of normal cellular metabolism or of intestinal absorption. It is worth while to touch upon the evidence from this point of view. Thus, it has been found that when an animal is thrown into tetany through removal of its parathyroids, the tetany is relieved by bleeding the animal and injecting salt solution. Presumptively, this treatment removes from the circulation certain poisonous matters which it was the function of the parathyroids to destroy.

Still stronger evidence has been fur-

nished for a detoxicating function of the adrenal capsules. When the suprarenal bodies are removed from a frog the effect is finally fatal. If, while still moribund, the frog is bled and its blood is injected into a normal frog, no ill effect is witnessed. But if the injection is made into a recently de-capsulated frog, the latter suffers rapid paralysis and death. Moreover, if this poisonous blood is injected under the skin of a normal frog in which a ligature has been previously thrown about one thigh, cutting off its circulation but not including the nerve trunk, after three hours the muscles of the ligatured leg contract normally when their nerve (omitted from the ligature) is stimulated; while stimulation of the nerve of the opposite leg, where the tissues have been bathed in the poisonous blood, produces no effect, though the muscles contract when directly irritated. The obvious conclusion is that the blood of a frog moribund from extirpation of the suprarenal bodies contains substances which paralyze the end plates of the motor nerves, somewhat as does curare.

Unfortunately for our therapeutic endeavors, the matter is still more complicated than has been represented. The investigations of Falta and others indicate that there is no such thing as the isolated action of a single ductless organ; that all the glands of internal secretion are mutually engaged in maintaining a normal biological equilibrium, and that necessarily there must be a readjustment in toto when the action of one is modified, in order to preserve what we call health. A great service has been rendered by Falta and his colleagues in showing that there are natural mutual exciting and inhibitory relations between at least certain of the ductless glands. Thus the thyroid and the chromaffin tissues are mutually stimulating, while the insular apparatus of the pancreas tends to inhibit both.

These relations may be represented by a triangle, the three angles representing the pancreas, the thyroid and the chromaffin tissue. The internal secretion of the pancreas tends to inhibit the effects excited by activity of either thyroid body or chromaffin tissue (most abundantly localized in the

adrenal medulla), while the secretions of both the latter organs mutually stimulate their tissues of origin, or at least magnify their effects.

Finally, it may be said that a welcome and hopeful element of exactness has accrued from researches in this field. It is generally granted that adrenalin or epinephrin, the active principle of the adrenal medulla, is a specific stimulant for the receptive substance at the peripheral termination of the sympathetic nerves, and that its pharmacological effect, whether of excitation or inhibition, depends upon the corresponding function of the nerve involved. Contrariwise an interesting analogy is furnished by the discovery of Langley that nicotine is equally selective of the receptive substance mediating between the sympathetic filaments and the ganglion cells of the peripheral ganglia interposed in the paths of the centrifugal fibres.

I have tried to show that whatever facts of mechanics postulate a relation between any of the ductless glands or their secretions and the eye, it is true to a peculiar degree that comprehension of any local reaction to the internal secretions must be founded on an apprehension of their general relations.

434 Majestic Building.

News Notes

The New York City health department calls attention to the poisonous nature of the exhaust from gasoline engines and warns the public against leaving the engine of an automobile running in a closed garage, a number of asphyxiations from this cause having occurred recently. The danger of using the exhaust for heating purposes in closed cars is also pointed out.

The death of Captain E. M. Sheehan of the One Hundred and Thirty-third infantry medical corps, Camp Cody, occurred January 12. The cause of death was pneumonia. Dr. Sheehan was formerly a member of St. Joseph's medical staff in Denver and was interested in national guard work in Colorado for a number of years, afterwards removing to Des Moines, Iowa.

Dr. H. S. Finney of Denver has tendered his resignation as a member of the health department of the City and County of Denver, in order to devote more time to his private practice.

Dr. John Snedic, former county physician of Pueblo county, is now with the American army in France in a hospital forty miles from the battle front, and writes to his friends that he is well and very busy.

Dr. T. M. Burns has been elected president of

the staff of Mercy hospital, Denver, for the present calendar year.

Dr. William E. Drisdale of Silver Plume, recently appointed a captain in the medical section of the U. S. army aviation corps, has reported for duty at South San Antonio, Texas.

The annual congress on medical education and licensure, composed of the A. M. A. Council on Medical Education, the Federation of State Medical Boards, and the Association of American Medical Colleges, was held February 4 and 5, 1918, at the Congress Hotel, Chicago. Colorado is prominently represented in this congress, Dr. David A. Strickler of our state board of medical examiners being president of the Federation of State Medical Boards. Besides delivering the annual presidential address before his section, Dr. Strickler read a paper before a joint afternoon session upon the subject, "A Central Cooperative Bureau of Information".

Major E. F. Dean of Base Hospital Unit Number Twenty-nine, who was recently ordered away for twelve weeks' special surgical work, is staying at the Quadrangle Club, Chicago.

The death of Mrs. W. C. Finnoff, wife of Captain Finnoff, M. O. R. C., occurred at Denver on January 26, one week following the birth of a son. Captain Finnoff was present in Denver at the time. The funeral on January 28 was largely attended by Denver physicians.

Dr. Oscar Hayes of Denver, who has served as acting assistant surgeon of the Denver navy recruiting station since 1912, has reported for similar duty at Johnstown, Pa.

Dr. Robert Levy of Denver will be the head of St. Joseph's hospital staff for the ensuing year, succeeding Major F. H. McNaught, who is now at Camp Kelley, Texas.

Dr. H. C. Goodson of Colorado Springs has succeeded Dr. C. O. Giese as president of the local medical advisory board, Dr. Giese having been called to California on account of the serious illness of his wife.

The Editor takes the liberty of personally mentioning that Dr. Frank B. Stephenson, Associate Editor of Colorado Medicine, and who now has charge of the news notes columns, recently announced that he had resumed practice in Denver.

There seems to be an aggravated outbreak of swindling fastened upon the doctors in various states, including Colorado. Warning is sent us against fake representatives of publishing houses, ending: "Every physician should decline to pay any money by check or otherwise to subscription agents not personally known to him, or for whom other physicians can not vouch. Many of these so-called agents operate under the guise of students 'working their way through college'".

Dr. C. L. LaRue of Boulder is now associated with Dr. F. R. Spencer of that city and is limiting his practice to ophthalmology and otolaryngology.

Statistics of the Department of Health, City of New York, for the year 1917, dealing with malnutrition of children, show the following percentages, graded according to the Dumferline scale: Excellent, twenty-five per cent; good to fair sixty-five per cent; in need of supervision, eight per cent; in need of medical care, two per cent. The prevalence of malnutrition among children is thought to have increased considerably during the past few years, and investigations are cited which show that this increase has gone hand in hand with the increase in cost of living. The advance in cost of milk is shown to have resulted in a diminution in the amount of milk used, and in the wider use of the cheaper grades of milk. Along

with this, there was an increase in the number of deaths of children from diarrheal diseases. The observers, however, still give first place in the causes of malnutrition to the ignorance of parents about the fundamental facts of dietetics.

Dr. Harry N. Krohn has returned to Denver after several months' service with the U. S. army.

Several arrests and convictions of Colorado doctors were made in January for violations of the national and state narcotic laws.

Governor Julius C. Gunter, in addressing the state conference of health officers and medical society representatives in the latter part of January, complimented Colorado particularly upon her contribution of medical men to the army and upon the work done for the moral and physical protection of soldiers in Colorado. In regard to conditions in the army, he pointed out that sickness in the camps is comparatively insignificant, that during the previous week reports showed only two cases of typhoid in the entire army, that less than one-tenth of one per cent of the soldiers are suffering from social diseases, that the number of deaths per one thousand is only one-third the number occurring during the Spanish-American war, and that the health of the United States soldiers in France is even better than that of the soldiers still in this country.

Dr. F. G. McKlveen has been reelected president of the staff of St. Anthony's hospital, Denver. The executive committee was likewise reelected without change, the personnel being: Dr. F. McCartney, Dr. W. F. Matson and Dr. George W. Miel.

Lieut. William M. Bane of Denver returned home from Fort Riley on a week's furlough the latter part of January.

Mrs. H. M. Lamberson, widow of the late Dr. Lamberson of Colorado Springs, has a perfectly new Tycos sphygmomanometer of which she would like to dispose.

Dr. R. S. Chamberlain has been appointed county physician, City and County of Denver, to succeed Dr. G. P. Lingenfelter, resigned.

Dr. Roy T. Drinkwater of Denver, serving in the army at the Honolulu post hospital, has been promoted to a captaincy.

The marriage of Lieut. A. B. Gjellum, formerly of Del Norte and Denver, to Miss Belle Rice took place January 24, 1918, at San Antonio, Texas.

Dr. Frank Finney of La Junta was confined to his bed for a few days in the early part of February with an attack of rheumatism.

Dr. and Mrs. F. M. Heller of Pueblo are enjoying an auto trip to Los Angeles, California.

Dr. Josephine Dunlop and Dr. R. H. Finney, both of Pueblo, are doing some original research work in the bacteriology of pneumonia.

Lieut. J. W. Thompson has been transferred from the aviation school at Mount Clemens, Michigan, to San Antonio, Texas, where he has been assigned to special work on the eye, ear, nose and throat for the aviation corps.

Dr. R. W. Corwin of Pueblo has received a request to meet at Washington, D. C., with a committee on medical affairs pertaining to the war.

Dr. Chas. J. Howard of Pueblo has accepted a position at Woodcroft Hospital.

Since the completion of the new Nurses' Home at the C. F. & I. Hospital, the floor of the hospital formerly used as the nurses' dormitory has been converted into a ward, thereby increasing the capacity of the hospital about forty beds.

The organization of a new medical club in Denver called the Clinical Review Club, the especial purpose of which is to study diagnosis and therapeutics, has been completed, with Dr. Blickens-

derfer as president, Dr. Weldon as first vice president, Dr. Finney as second vice president, Dr. Stuver as secretary, Dr. Paine as treasurer-steward. Meetings will be held on the third Thursday of each month.

Dr. T. A. Stoddard of Pueblo has received a commission as captain in the medical reserve corps, and is expecting to be called at any time.

Doctors Macomber, Wollenweber and Bonesteel desire an office associate in place of Dr. DeShon who took a position in South America some time since.

The members of the state society learned with regret of the death of one of their number, Dr. John Q. Allen of Montrose, who was found dead at the steering wheel of his automobile on the road from Montrose to Cimarron on January 7. Dr. Allen was coroner of Montrose county, former mayor of Montrose and a resident of that city for twenty-five years.

In the latter part of December Dr. D. C. Groves of Olathe was host to the Montrose county medical society at what is modestly described as a big turkey supper at the Cottage Home hotel. Practically the entire membership of the society was present.

Dr. Rex Fuller has arrived at Salida from Seward, Nebraska, to succeed Dr. C. S. Phalen as assistant to Dr. G. H. Curfman in the D. & R. G. hospital. Dr. Phalen has been given a lieutenancy in the M. O. R. C. and will be assigned to either Fort Riley or Fort Oglethorpe for training.

Drs. Carroll E. Edson and Charles N. Meader of Denver have announced the removal of their offices from the McPhee building to the Majestic building.

At the December meeting of the Garfield county medical society the following officers were elected for the ensuing year: W. W. Crook, Glenwood Springs, president; W. R. Tubbs, Carbondale, vice-president; J. P. Riddile, Glenwood Springs, secretary-treasurer.

In order to conserve the ammonia supply of our country for war purposes, the U. S. food administration authorities have undertaken to discourage, as far as is compatible with public health, the manufacturing of artificial ice, in which industry large quantities of this chemical are used. They state that, while it is obvious that municipalities should not permit the use of polluted ice, there is much misapprehension and prejudice concerning the use of natural ice that careful consideration and study will dispel. To any boards of health interested in this subject, the food administration will be glad to send any of thirteen booklets which they cite as bearing upon the matter of natural ice.

We quote from a letter received by the editor from Dr. Robert G. Packard of Denver, now at Camp Custer: "I spent the month of November in New York, taking an intensive course in fractures . . . and now I am back at camp, but have no idea how long I shall have to remain here. . . . My brother has already been ordered to New York . . . to report for the mobilization of a hospital there with the probability of sailing in January or February. . . . I keep rather busy here, for, in addition to the strictly medical work, all the officers have a lot of drilling to do, classes and lectures to attend, and, optionally, French to study. . . . Dr. Fred Carpenter of Denver is now on duty here, . . . after having taken a special course in plastic and oral surgery at St. Louis. . . . Major Gerald Webb of Colorado Springs is here temporarily, in command of the tuberculosis examining board which is examining every man in the

division. Major Webb goes to the various camps in this work."

Maj. Edward W. Lazell, in command of the Colorado field hospital unit, now in France, has been temporarily relieved of the command and, according to a communication received by his wife, is awaiting a command in the department of neurology. Capt. A. J. Campbell of Denver has been appointed major to succeed Major Lazell in command of the unit.

Dr. George H. Cattermole, formerly of Boulder, has recently become associated with Dr. Frank P. Gengenbach in the practice of pediatrics, with offices at 452 Metropolitan building, Denver.

The American Society for the Control of Cancer, in a bulletin recently issued, commends very highly the work of the Colorado committee in introducing a somewhat novel method of acquainting the women of Denver with cancer control problems and measures, and recommends to other constituent societies that they follow Colorado's lead along similar lines. This work, in brief, has consisted in organization of the women of department stores with appointment of committees. These committees are given instruction regarding the nature and prevention of cancer and they, in turn, pass the instruction along to the other employes and distribute circulars and announcements of lectures with which they have been provided. The talks and lectures so far given have been well attended, and many requests for more talks signify that the interest is to be permanent. The secretary of the Colorado committee is Miss Lilian Hurd of Denver and the practical work of organization has been accomplished largely through her efforts.

The National Association for the Study and Prevention of Tuberculosis launched a membership campaign February 4, the effort being to get five thousand new members. Allotments have been made to the constituent state societies based on the population of the respective states. It is noted from figures given in the January bulletin that Colorado stands well to the front in proportional membership and has been allotted only about double her present number, that is, she is to try to secure sixty-five new members and at present has sixty. Colorado stands fifth among the states in this regard, the central and other western states falling far behind her. It should be an easy matter for this state to acquire her full quota of members.

LIST OF MEDICAL ADVISORY BOARDS FOR COLORADO.

Pueblo, Pueblo County, No. 1. Hubert Work, president; Crum Epler, x-ray surgery and genitourinologist; M. J. Keeney, internist; Fritz Lassen, nose, throat and ear; C. W. Maynard, laboratory; C. W. Thompson, neurologist; H. M. Thompson, eye; E. W. Varley, dentist.

Colorado Springs, El Paso County, No. 2. C. O. Giese, president; L. W. Bortree, laboratory; Harry C. Goodson; P. O. Hanford, surgeon; H. C. Moses, x-ray; W. V. Mullin, ear, nose and throat; E. R. Nepper, eye; Frank T. Stevens, neurologist; F. P. Wells, dentist.

Denver, Denver County, No. 3. G. W. Holden, president; Harry L. Baum, ear, nose and throat; Helen Craig, laboratory; Edward Delehanty, neurologist; Casper F. Hegner, surgeon; T. Leon Howard, genito-urologist; H. W. LeFevre, dentist; H. R. Stilwill, eye; David A. Strickler, eye and ear; Arnold S. Taussig, internist; W. Walter Wasson, x-ray.

Boulder, Boulder County, No. 4. John S. Bousley, x-ray; C. N. Eddy, dentist; Amy Miles, laboratory; M. E. Miles, internist; W. W. Reed, surgeon; F. R. Spencer, eye, ear, nose and throat.

Greeley, Weld County, No. 5. J. C. Carlson (Eaton); C. A. Ringle; G. E. Sutphin, dentist; B. Woodcock.

Fort Collins, Larimer County, No. 6. W. A. Kickland; H. J. Livingston, dentist; E. L. Morrill; E. L. Sadler.

Steamboat Springs, Routt County, No. 7. I. R. Bertram, dentist; F. J. Blackmer; F. E. Willett.

Fort Morgan, Morgan County, No. 8. E. E. Evans; F. W. Lockwood; William J. Peyton, dentist; A. F. Williams.

Sterling, Logan County, No. 9. M. L. Babcock; J. C. Chipman; C. A. Greenwalt, dentist; William Greig.

Durango, La Plata County, No. 10. A. L. Davis; John Haggart; A. W. Robbins; E. A. Schlabach, dentist.

Delta, Delta County, No. 11. John H. Baker, dentist; Edgar Hadley (Montrose); L. A. Hick; Harry A. Smith.

Grand Junction, Mesa County, No. 12. H. R. Bull; K. K. H. Hanson; C. W. Plumb; George R. Warner, dentist.

Glenwood Springs, Garfield County, No. 13. L. G. Clark; William W. Crook; J. P. Riddle; LaVerne Williams, dentist.

Leadville, Lake County, No. 14. B. F. Griffith; J. A. Jeanotte; Max Raabe, dentist; J. C. Strong.

Salida, Chaffee County, No. 15. S. R. Beckley, dentist; G. H. Curfman; F. A. Jackson; G. W. Larimer.

Alamosa, Alamosa County, No. 16. W. C. Davis, dentist; L. L. Harriman; Charles E. Morse; Robert Van Sands.

Trinidad, Las Animas County, No. 17. H. E. Abrahams; C. O. McClure (Starkville); L. T. Richie; N. N. Wycoff, dentist.

La Junta, Otero County, No. 18. Frank Finney; R. S. Johnston; John Marquardt, dentist; A. L. Stubbs.

Lamar, Prowers County, No. 19. N. M. Burnett; A. C. Davis; L. G. Leist, dentist; L. E. Likes.

TO REPORT ACCIDENTS FROM LOCAL ANESTHETICS.

A letter from the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association states that the committee has undertaken a study of the accidents following the clinical use of local anesthetics, especially such accidents following ordinary therapeutic doses.

Some at least of the local anesthetics in general use are prone to cause death or symptoms of severe poisoning in a small percentage of those cases in which the dose used has been hitherto considered quite safe. These accidents may probably be attributed to a peculiar hypersensitivity on the part of the patients. The data necessary for a study of these accidents are at present wholly insufficient, especially since the symptoms described in most of the cases are quite different from those commonly observed in animals even after the administration of toxic, but not fatal, doses.

Such accidents are seldom reported in detail in the medical literature, partly because physicians and dentists fear that they may be held to blame should they report them, partly, perhaps, because they have failed to appreciate the importance of the matter from the standpoint of the protection of the public.

It is evident that a broader view should prevail, and that physicians should be informed regarding the conditions under which such accidents occur in order that they may be avoided. These accidents should be reported in the medical or dental journals when possible; but when, for any reason, this seems undesirable, a confidential report may be filed with Dr. R. A. Hatcher, 414 East Twenty-sixth Street, New York City, who has been appointed by the Committee to collect this information.

If desired, such reports will be considered strictly confidential so far as the name of the patient and that of the medical attendant are concerned, and the information will be used solely as a means of studying the problem of the toxicity of this class of agents, unless permission is given to use the name.

All available facts, both public and private, should be included in these reports, but the following data are especially to be desired in those cases in which more detailed reports cannot be made:

The age, sex, and general history of the patient should be given in as great detail as possible. The state of the nervous system appears to be of especial importance. The dosage, the concentration of the solution, and the site of the injection should be stated as accurately as possible. The possibility of an injection having been made into a small vein during injection intramuscularly or into the gums should be considered. In such cases the action begins almost at once, that is, within a few seconds.

The previous condition of the heart and respiration should be reported if possible; and, of course, the effects of the drug on the heart and respiration, as well as the duration of the symptoms, should be recorded. If antidotes are employed, their nature and dosage should be stated, together with the character and time of appearance of the effects induced by the antidotes. It is important to state whether antidotes were administered orally, or by subcutaneous, intramuscular or intravenous injection, and the concentration in which they were used. Inability to supply such details should not prevent the publication of reports of poisoning, so long as accuracy is observed. The Committee urges on all anesthetists, surgeons, physicians and dentists the making of such reports as a public duty.

Medical Societies

BOULDER COUNTY.

Boulder County Medical Society met in January as guests of the Colorado Sanitarium in the Sanitarium dining room at seven p. m. An excellent seven-course dinner was enjoyed by the twenty-five people present. Short speeches were made by Elder R. A. Underwood, Drs. C. L. La Rue, O. M. Gilbert, and Kate Lindsay.

The members then retired to the reception room and the business meeting and annual election were held. The secretary read replies to letters recently sent to our congressmen, also letters from the State Board of Health. Motion was carried that the secretary write the secretary of the State Board of Health assuring him of our desire to cooperate in the care of tuberculous soldiers returning from the war. The president was instructed to appoint the committees asked for. Dr. F. R. Spencer moved that Dr. O. M. Gilbert be appointed as chairman, but Dr. Gilbert

declined the chairmanship, agreeing, however, to serve on the committee.

The annual election of officers was held, with the following results:

President, C. L. LaRue; first vice president, J. N. Braden; second vice president, Dr. Mary Weber; secretary-treasurer, John Bouslog; delegates, H. C. E. Giffin, F. R. Spencer (alternate), and H. Jacob Campbell (second alternate).

An unanimous vote of thanks was extended to the Colorado Sanitarium for the good dinner and the excellent entertainment.

C. L. LARUE,
Secretary.

CITY AND COUNTY OF DENVER.

The annual meeting of the **Medical Society of the City and County of Denver** was held on the evening of January 1, 1918. President Childs was in the chair.

Drs. Augustine Sautine Cecchini, James W. Polard, Harold C. Lane, J. W. Harris, Patrick A. Murphy, A. O. McMichael, William Zimmermann and Thompson Anderson were elected to membership in the society.

Dr. Robert Levy read the annual reports of the board of trustees and library director.

The annual reports of the secretary, treasurer, and board of censors were read and placed on file.

President S. B. Childs then gave his retiring address on "What the Medical Profession Has Done in the War". After mentioning what had already been done prior to this war, he continued with an exhaustive review of all the original work done since its beginning.

Among the interesting subjects reviewed, he spoke of the new antiseptic methods of treating wounds, the advances in surgery, especially of gun shot wounds and wounds of the face, the realization of the effect of the venereal diseases and the efforts for their control. He also spoke of the number of enlistments in the Medical Reserve Corps, stating that Colorado nearly had its quota but was still short twenty-nine.

The following officers were elected for the ensuing year: Dr. George A. Moleen, president; Dr. R. W. Arndt, vice-president; Dr. F. P. Gengenbach, treasurer; Dr. R. G. Smith, secretary; Dr. S. B. Childs, trustee; Dr. R. G. Walker, censor; delegates to the State Society: Drs. H. R. Stillwill, R. W. Arndt, T. E. Carmody, C. E. Cooper, G. M. Blickensderfer, F. C. Buchtel, A. H. Earley, R. G. Smith; alternates: Drs. R. L. Charles, C. A. Ferris, A. J. O. Löf, G. K. Olmsted, Minnie C. T. Love, L. M. Drown, O. S. Fowler, E. C. Hill.

M. R. STRATTON,
Reporter.

The regular meeting of the **Medical Society of the City and County of Denver** was held Tuesday evening, January 15, 1918. President Moleen was in the chair.

Dr. Miel made a motion that the society extend a vote of thanks to the retiring officers of last year, which was carried by a rising vote.

The president appointed the following committee on Public Health and Legislation: Dr. D. A. Strickler, chairman; Dr. Wm. H. Sharpley and Dr. Hugh L. Taylor.

The president also appointed Dr. Philip Hillkowitz and Dr. R. W. Arndt to serve with him as directors.

Dr. John Foster exhibited a patient who had had a small spindle cell sarcoma of the orbit, now

apparently cured by surgery followed by x-ray treatment.

Dr. Carl Hornecker and Dr. Otis Kelsey were elected to membership in the society.

A communication was read from Dr. E. E. Kennedy of the State Board of Health. It was decided to lay the matter over until the next business meeting and to invite Dr. Kennedy and the civilian relief committee to attend the meeting and participate in the discussion. In this connection Dr. Wetherill asked what responsibility the federal government expected to assume in the cure of the tuberculous drafted men discharged from the army.

Dr. Philip Hillkowitz gave a case report which dealt with the "Histological and Bacteriological Demonstrations of Tuberculous Abscess of the Cerebellum".

Dr. Cuthbert Powell then gave a talk upon the "Emergency Medical Care in the Recent Recruiting Rush".

M. R. STRATTON,
Reporter.

OTERO COUNTY.

The **Otero County Medical Society** met in regular session at the Santa Fé Hospital in La Junta on January 15, with R. S. Johnston presiding. The following officers were elected for 1918: President, O. E. Zillman, Manzanola; vice president, P. R. G. Hersom, La Junta; secretary-treasurer, R. S. Johnston, La Junta; state delegate, R. S. Johnston, La Junta; councillors, E. W. Ragsdale, A. L. Stubbs, W. M. Moore.

A committee consisting of the county health officers was appointed to care for the returned tuberculous soldiers.

R. S. JOHNSTON,
Secretary.

PUEBLO COUNTY.

At the annual meeting of the **Pueblo County Medical Society** held Jan. 1, 1918, the following officers were elected: Dr. Josephine Dunlop, president; Dr. W. F. Rich, secretary; Dr. C. W. Thompson, delegate; Dr. J. A. Black, censor; Dr. J. H. Woodbridge, reporter.

Two regular meetings of the **Pueblo County Medical Society** have been held, one on January 15, 1918, when a paper on acute articular rheumatism was presented by Dr. W. T. H. Baker, the other on February 5, 1918, when Dr. H. A. Black presented a paper on uterine fibroids.

J. H. WOODBRIDGE,
Reporter.

WELD COUNTY.

RESOLUTIONS ON THE DEATH OF DR. JAMES GILBERT HUGHES.

Whereas, It has pleased the Almighty to remove from our midst by death our esteemed friend and fellow worker Dr. James Gilbert Hughes, who had for many years occupied a prominent rank in our midst, maintaining a character untarnished, and a reputation above reproach.

Therefore, Be it Resolved: That in the death of Dr. Hughes we have sustained the loss of a friend whose fellowship it was an honor and a pleasure to enjoy; that we bear willing testimony to his many virtues, and offer to his bereaved family and mourning friends, over whom sorrow has hung her sable mantle, our heartfelt condol-

ence, and pray that Infinite Goodness may bring speedy relief to their burdened hearts.

The Weld County Medical Society.

CHARLES A. RINGLE, President.

ELLA A. MEAD, Vice President.

W. F. SPAULDING, Secretary.

Greeley, Colorado, January 17, 1918.

COLORADO OPHTHALMOLOGICAL SOCIETY.

The regular meeting of the Colorado Ophthalmological Society was held at Denver December 15, 1917, Dr. G. F. Libby presiding.

Dr. J. A. McCaw presented a case of sclerocorneal tuberculosis in a woman of thirty-five years. This case was discussed by Drs. M. Black, G. F. Libby, E. R. Neeper, and H. R. Stilwill.

Dr. H. R. Stilwill presented a case of primary optic atrophy in a boy of eight years. This case was discussed by Drs. E. Jackson, M. Black, W. H. Crisp, E. R. Neeper and G. F. Libby.

Dr. M. Black presented a man, age thirty, who had traumatic dislocation of lens. The case was discussed by Drs. W. F. Matson, C. E. Walker, and W. H. Crisp.

Dr. M. Black presented a second case, a woman sixty-five years of age, who had had a cataract operation twenty-five years ago. She gained normal vision with correcting lens. Dr. W. H. Crisp discussed this case.

Dr. F. R. Spencer presented a boy of five, with steel in orbit. Dr. Spencer's case was discussed by Drs. M. Black, E. R. Neeper, E. Jackson, and W. C. Bane.

Dr. G. F. Libby presented a man, age forty-five, with traumatic choroiditis and, probably, hemorrhage into vitreous. This was discussed by Drs. M. Black, E. R. Neeper, F. E. Wallace and E. Jackson.

Dr. D. A. Strickler reported a case of traumatic or infectious conjunctivitis in an imbecile child, age ten. The case was discussed by Drs. M. Black and W. C. Bane.

Dr. F. E. Wallace reported the case of a man, age thirty-three, with probable retinal tuberculosis. Drs. E. Jackson, W. H. Crisp, G. F. Libby and M. Black discussed the case.

For a detailed report see the American Journal of Ophthalmology.

FRANK R. SPENCER,
Secretary.

PUEBLO CLINICAL AND PATHOLOGICAL.

The Pueblo County Clinical and Pathological Society held its January meeting at the Union Depot Hotel, Pueblo, Wednesday evening, January 9, 1918, Dr. C. W. Thompson, the newly elected president, in the chair.

Following a dinner the following case reports were presented:

By Dr. William Senger, a case of brain abscess in a nine-year-old boy, coming to recognition five weeks following an accidental blow on the forehead. A high leukocyte count, headache, and stupor, with atypical vomiting, were the chief features of the case. Drainage of the abscess cavity was followed by recovery.

By Dr. H. M. Thompson, blepharospasm due to pyorrhea alveolaris. The patient was a man of advanced years, with a very severe and intractable spasm of the orbicularis palpebrarum, bilateral. The Wassermann was negative, and heavy doses of mercury and iodides gave no relief. The patient had refused to have his teeth removed, although there was a high-grade pyorrhea through-

out the mouth, but finally consented to extraction. Within twenty-four hours the eyes could be opened with effort, and in three days the patient went home, comfortable.

By Dr. C. W. Thompson, a case of juvenile hysteria in a boy, eight years old, who showed transient paralysis of the left leg at frequent intervals, each attack lasting five to fifteen minutes. The attacks developed only when some member of his family was present. The typical stigmata of hysteria were demonstrable. Improvement followed isolation of the patient from his family.

By Dr. J. H. Woodbridge, a case of acute nephritis, occurring in an attack of "grippe". The discussion brought out the prevalence of nephritis following tonsillar infections, or epidemic "colds".

Dr. F. E. Wallace discussed the tonsil, speaking against its removal before the fifth or sixth year, in the absence of severe, recurrent infection.

C. W. MAYNARD,
Reporter.

Book Reviews

Rest, Suggestion and Other Therapeutic Measures in Nervous and Mental Diseases, by Francis X. Dercum, A.M., M.D., Ph.D. Second edition. P. Blakiston's Son & Co., Philadelphia. Price, \$3.50 net.

This book was originally Vol. VIII of Solis-Cohen's System of Physiologic Therapeutics. It has been rewritten so as to be a comprehensive work on the treatment of the functional nervous diseases and various forms of insanity.

It is a remarkably agreeable book to read. The results of large clinical experience and extensive study of medical literature are given in a plain, straightforward yet graceful way, for which one is thankful. The advice as to treatment always bears the stamp of strong common sense along with that of experience and learning.

Part I deals principally with rest, but also with medicines and other means of treatment in neurasthenia, hysteria, hypochondria and other functional disorders. The complete, rigid rest cure, as introduced by S. Weir Mitchell, is fully described, but the impracticability of this for many patients is recognized and suitable modifications are recommended.

Part II deals with the treatment of insanity, general and special. Very good results are reported in tabes and in paresis from rest in bed with weekly lumbar puncture and evacuation of all the spinal fluid that will flow.

Part III is devoted to suggestion. Normal suggestion, especially that which is indirect and apparently unintentional, is explained and regarded as very valuable in neurasthenia, hysteria and other functional nervous diseases. Under the head of "Suggestion by Mystic and Religious Methods," we have a clear and most interesting account of Pythonism, Shamanism, Magnetism, Mesmerism, Hypnotism, Psychoanalysis, Metallotherapy, Perkin's Tractors, Mind Cure, Faith Cure and Eddyism. Every physician ought to read this chapter. It is reasonable, moderate and based on solid fact.

Hypnotism is regarded as hysteria artificially induced, always detrimental to the mental constitution of the subject and often to the intellectual integrity of the operator.

It is only Freudism or the so-called psychoanalysis that can jar the genial writer out of his attitude of sweet reasonableness.

After a very clear and just account of the Freudian theories in their development and practice he breaks out with this: "In what words shall we characterize such fantastic nonsense, such vacuities, harebrained absurdities, such meaningless jargon! And such utterances are dealt with by the psychoanalytic sect as though they were each and every one scientifically demonstrated facts, self-evident, axiomatic truths". He gives up the attempt at characterization but warns the reader not to undertake psychoanalytic methods, because they are not only based on a false, fantastic theory but are harmful to both patient and physician.

Altogether this is a book that one can confidently recommend.

H. T. P.

Neurosyphilis, Modern Systematic Diagnosis and Treatment. Presented in One Hundred and Thirty-seven Case Histories. By E. E. Southard, M.D., Sc.D., Bullard Professor of Neuro-pathology, Harvard Medical School; Director Psychopathic Department, Boston State Hospital; etc., and H. C. Solomon, M.D., Instructor in Neuropathology and Psychiatry, Harvard Medical School; Acting Chief-of-Staff, Psychopathic Department, Boston State Hospital; etc. With an Introduction by James Jackson Putnam, M.D. Octavo, 500 pages, with 25 full page illustrations, \$5.00. Boston, W. M. Leonard, Publisher. 1917.

This volume is the seventh of the "Case History" series which began with those of medicine by Richard C. Cabot. The subject matter is drawn chiefly from a psychopathic hospital which is prefatorily characterized as "that modern type of institution in which the mental problems of general medical practice come to a diagnostic head weeks, months, or years before the asylum is thought of". The case histories presented were selected from over two thousand cases of syphilis and are classified under six sections as illustrative contentions as follows:

1. The nature and forms of syphilis of the nervous system (neurosyphilis).
2. The systemic diagnosis of the forms of neurosyphilis.
3. Puzzles and errors in the diagnosis.
4. Neurosyphilis, medico-legal and social.
5. The treatment of neurosyphilis: (a) Variety of structural lesions that treatment has to face. (b) Examples of treatment including successes and failures.
6. Neurosyphilis and the war.

Each case is captioned with the argument or contention which it is intended to illustrate.

In the form of an appendix, a summary and key to the work are given, emphasizing (1) the unity-in-variety of the phenomena of neurosyphilis, (2) the value of a hopeful approach to the therapy of all cases of neurosyphilis, even the paretic form, and (3) the value of applying syphilis tests to every case of neurosis or psychosis.

In a second appendix, the common methods of treatment used in cases of neurosyphilis are presented.

The treatment used in the cases detailed was chiefly that styled "intensive systematic intravenous", and consisted of intravenous injections of 0.6 gram of salvarsan (or substitutes), repeated twice a week for several months, together with specialized forms (spinal subdural, cerebral subdural and intraventricular) in order to "place the drug in contact with the central nervous system".

Some of the descriptions of technic lack clearness, such as the site for trephining for cerebral intradural injection which is stated as "slightly back of the longitudinal prominence just to the

right of the median line, to avoid the frontal sinus"; and also that a "blunted spinal puncture needle is thrust through the brain substance into the third ventricle". If the third ventricle is preferred on good grounds to the more accessible lateral ventricle, these grounds might appropriately be given, especially if the general practitioner is to be guided as is indicated in the stated primary purposes of the work.

As a detail of the experiences of the authors with what may be regarded as a decidedly radical, if not invariably curative, treatment, the work illuminates many dark recesses in the clinical course of nervous syphilis; and the study of the records will tend to broaden the general prevailing conceptions of the pathology, rather than lead to dogmatic views, clinical as well as therapeutic.

The large clear print, a complete index and the binding are entitled to commendation. G. A. M.

Food for the Sick. By Solomon Strouse, M.D., Associate Attending Physician, The Michael Reese Hospital; Professor of Medicine at the Post-Graduate School, Chicago, and Maude A. Perry, Dietitian at the Michael Reese Hospital, Chicago. 12mo of 270 pages. Philadelphia and London: W. B. Saunders Company. 1917. Cloth, \$1.50 net.

This compact book is intended for the guidance of physician, nurse and patient. It is, therefore, written in language that can easily be understood by the layman, serving as a practical guide in prescribing the proper food, giving the reason for it, and its preparation. An opening chapter is on food and its uses, with a table on the average composition of common American food products, also Atwater standards and menus for normal individuals. Succeeding chapters are devoted to diets in diseases of kidney, of heart, of stomach, of intestines, of liver, of respiratory tract, of skin; in fevers, in obesity, and in anemia, scurvy and goiter.

There are given reasons for diet, point to be attained, specimen diets and instructions for preparing the different dishes. The authors aim to have the patient control his own case, to guide him through the intricacies of food values, and on the whole to educate the sick to become assistants rather than blind followers. The book fulfills its purpose well.

J. L. M.

The Practical Medicine Series; Volume VII, Obstetrics, edited by Joseph B. De Lee, A.M., M.D., with collaboration of Eugene Cary, B.S., M.D., Series 1917. The Year Book Publishers, 608 S. Dearborn St., Chicago, Ill.

This volume of the series represents the recent advancements of obstetrics. It is the end result obtained from a large collection of the recent literature on the subject, which has been concentrated to the salient facts and commented upon here and there by the editor. The sections on pregnancy and labor are especially interesting and instructive, considerable emphasis being placed upon the importance of blood pressure in pregnancy, the danger of high and low blood pressures being pointed out and warning given against the neglect of these conditions. Abdominal and pelvic pathological conditions complicating pregnancy, such as appendicitis, salpingitis, etc., also receive much attention. The fact is, many of the articles under this heading are so rich in instruction, their statements are so definitely proven and of so great importance to mother and child, that one doing obstetrical and gynecological work can scarcely afford to overlook or neglect this vol-

ume. Extra-uterine pregnancy comes up again with renewed interest, the report by C. J. Wallace of a successful transplantation of an extra-uterine pregnancy to the cavity of the uterus opening a new field for surgical interference in this condition.

Rectal vs. vaginal examinations in labor; the use and abuse of pituitary extracts, morphine, scopolamin, oxygen gas and other anesthetics in labor; painless labor; placenta previa, and operations and indications for the same during labor, are topics which are well presented, very instructive and deeply interesting. This book is ideal as a complement to the text book, and a knowledge of its contents or of the literature from which it is an extraction is indispensable to the progressive practitioner.

L. J. W.

The Practical Medicine Series, 1917, Volume VIII; Pharmacology and Therapeutics, by Bernard Fantus, M.S., M.D., Associate Professor of Medicine, Subdepartment of Therapeutics, Rush Medical College, Chicago, Ill., and **Preventive Medicine**, by William A. Evans, M.D., LL.D., Ph.D., Professor of Preventive Medicine, Northwestern University Medical School. Price of volume, \$1.50; Price of the series of ten, \$10.00; each volume being complete on the subject of which it treats for the year prior to its publication.

Fantus begins with T. Sollman's comparative method or blind test for obtaining the worth of any drug or method of treatment. He notes the new drugs added to the new pharmacopoeia, and the two hundred and forty-three articles dropped, which are nearly all added to the national formulary. Next he abstracts the methods of medication published during the year and divides the rest of his subject under the following heads: etiotropic therapy, restorative therapy, symptom therapy, toxicology, war time economy of drugs, and non-pharmaceutical therapeutics. Many subjects of interest are included under these divisions, such as new antiseptics and disinfectants, films, and immunizations, as well as the new dangers of botulism in canned vegetables and the poisoning with coal tar derivatives encountered in our new industries.

In the second part of the book, which deals with preventive medicine, Evans, in his introduction, calls attention to the profound influence which the war has had and still will have upon this branch of medicine. The author starts his abstracts with health insurance, public health departments and vital statistics, then takes up sanitation and follows with a review of an article upon school inspection. The largest space is given to infectious and contagious diseases. The subjects of prevention of occupational diseases and military hygiene finish the book. The author has gathered together many things of interest from the British army and navy activities, such as methods of checking epidemic meningitis. There are abstracts of many of the war time advances in medicine.

The entire book is well worth reading.

M. R. S.

1916 Collected Papers of the Mayo Clinic: Octavo of 1014 pages, 411 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$6.50 net; Half Morocco, \$8.50 net.

The collected papers of the Mayo Clinics for 1916 comprise a large volume, covering subjects of interest in every branch of medicine and surgery. The scope of the work is rapidly increasing and the excellence is being maintained by the wonderful organization.

Many new names are noted among the contributors to the volume for 1917. The papers on surgical topics constitute the major portion. The articles on diseases of the stomach, intestines, colon and rectum by Crispin, Eusterman and the Mayos are classics. Surgery of the biliary passages is no less ably presented by Judd and Charles Mayo. These subjects are considered and discussed at length from the viewpoint of the internist, the laboratory worker, the radiographer and the surgeon. The conservatism in the treatment of systemic diseases by operations on the colon (removal of the right colon being the operation of choice) is commendable.

The work of Rosenow continues to measure up to the standard he has set for the rest of the world.

The view taken by Dr. Charles Mayo of the place and value of the x-ray in the diagnosis of internal diseases is most rational.

The relation of dentistry to medicine strikes the keynote of progress in preventive medicine. It does seem, however, that much harm has been done and is being done through poor dental work. This is a comparatively new field, and although much has been accomplished, more can be expected by proper standardization of technic and methods of procedure.

The suggestions offered in the paper, *The Value of Public Health Service*, command earnest attention and more general application. This branch of medicine is still in its infancy and, in its development, will call for the services of men trained in this particular field.

There is not a single paper in the entire collection that does not contain valuable information. The collected papers of the Mayo Clinics should be read by every medical man who is seriously interested in the progress that is being made by the profession and, further, should find a prominent place in every medical man's library.

C. F. H.

The Medical Clinics of North America: Volume I, Number III (The New York Number, November, 1917). Octavo of 346 pages. 37 illustrations. Philadelphia and London: W. B. Saunders Company. Published bi-monthly. Price per year: Paper, \$10.00; Cloth, \$14.00.

This number has a long list of contributors, among whom are some of the foremost physicians of New York City, with a wealth of material from the leading hospitals of that city.

It is impossible to devote sufficient space to criticism of all the various articles, and the reviewer does not wish that the failure to comment upon every contribution be construed as condemnatory. There is overlapping of material as, for instance, in the clinics of Drs. Einhorn and Chase, on "Disease of the Kidney", also the discussions of "Acidoses" by Drs. Palmer, Schloss and Geyelin, but this is far from being detrimental, since it is often an advantage to get various methods and viewpoints.

This number as a whole is very satisfactory. Each clinic has been written by a physician particularly qualified in his field. It is certain that the methods employed in the diagnosis and treatment are such as would be approved by the medical profession in general.

J. L. M.

Surgical Clinics of Chicago, December, 1917. Volume I. Number VI. With 89 illustrations; index number; published bi-monthly; W. B. Saunders Company, Philadelphia and London. Price per year: paper, \$10.00; cloth, \$14.00.

The contributors to this number of the Clinics

are Drs. Lewis, Kretschmer, Schmidt, Ochsner, Carl B. Davis, Bevan, C. Henry Davis, Cary, Beck, Besley, Kreuscher, Dyas, Eisendrath, Speed.

There are three articles on carcinoma of the rectum; one by Dr. Ochsner, one by Dr. Carl B. Davis and one by Dr. Bevan. It is interesting to note that each one of the three men suggests a different operative procedure for practically the same condition. In this day when it seems to be the desideratum of surgery to standardize the treatment for various conditions, these three articles are suggestive of the great difficulty of this procedure.

Dr. Kreuscher gives the histories of three cases of hypertrophic villous synovitis of the knee-joint. In each one of the three cases the cause of the condition was a focal infection. One of the cases passed through Murphy's clinic without having the apical abscesses treated by extraction.

One of the most instructive articles in this number is that by Dr. Besley on fractures, which bears very careful reading.

The Clinic as a whole is rather above the general high average that has been maintained by the Surgical Clinics of Chicago. F. C. B.

A Manual of Anatomy. By Henry E. Radasch, M.Sc., M.D., Assistant Professor of Histology and Embryology in the Jefferson Medical College, Philadelphia. Octavo of 489 pages with 329 illustrations; Philadelphia and London; W. B. Saunders Company. 1917. Cloth, \$3.50 net.

This book, which was originally intended as a visceral anatomy for the use of medical students, has been enlarged and chapters in osteology, syndesmology and myology have been added. The chapters on the blood-vascular and nerve systems have been extended so as to include the appendages and their plexuses, thereby making this work desirable not only for medical students but for the busy practitioner who may wish to consult a hand-book on anatomy that is not large and voluminous.

Among the admirable features in this treatise the following may be mentioned: The B. N. A. nomenclature, given in parentheses after each old term, which will help the student to become familiarized with the old, as well as the new terminology; the use of the terms ventral and dorsal instead of anterior and posterior, respectively, which will avoid the confusion often arising between anatomists and embryologists; and the excellence of the illustrations, many of which were made from photographs of organs and preparations under discussion.

As a convenient means of review, or of refreshing the memory as to anatomical facts previously learned, this work of about 500 pages will be found eminently satisfactory as well as profitable.

O. M. S.

Annual Report of the Surgeon General of the Public Health Service of the United States for the fiscal year 1916. Washington, Government Printing Office, 1916.

This report of the varied activities of the government in safeguarding the health of the country by preventing the invasion of disease and disease-bearing agents from other parts of the world, is quite comprehensive and is divided into sections with the following headings: Scientific Research, Foreign and Insular Quarantine and Immigration, Domestic Quarantine, Sanitary Reports and Statistics, Marine Hospitals, and Relief.—H. W. W.

Medical War Manual Number 3, Military Ophthalmic Surgery; by Allen Greenwood, M.D., Major, M.R.C., U. S. A., recently Honorary Lieut-Colonel Harvard Surgical Unit with the Royal Army Medical Corps, British Expeditionary Force; including a chapter on trachoma and other contagious conjunctival diseases, by G. E. De Schweinitz, M.D., Major M.R.C., U. S. A., and a chapter on ocular malingering by Walter R. Parker, M.D., Major M.R.C., U. S. A. Illustrated. Lea and Febiger, Philadelphia and New York, 1917. Price, \$1.50.

This handbook, says the preface, aims to provide in condensed form suggestions that may be helpful to medical officers who have to deal with special ophthalmic problems in the daily routine of active army medical work. The chapters by De Schweinitz and Parker are more especially intended for the officers conducting cantonment examinations.

The main part of this small volume, the section by Allen Greenwood, largely reflects his personal experience, especially in hospital service in the European war zone. He emphasizes the necessity for the ophthalmic surgeon to be always on the lookout for undiagnosed intra-ocular foreign bodies. Most wounds of the eyeball in the war zone are produced by flying fragments of shell casing, bits of exploding hand-grenades, unburned cordite, or sand and gravel thrown into the eyes by the explosion of shells among the sand bags of the trench parapet. In cases where enucleation of the eyeball is necessary, some form of implantation is strongly recommended; during the summer of 1916 Major Greenwood had the opportunity of implanting over thirty glass globes where it was necessary to do an ordinary enucleation. For the removal of magnetic intra-ocular foreign bodies of small size, Greenwood particularly favors what he calls "the arm magnet", which is supported by a strap passing over the surgeon's shoulder, and is guided by his forearm and hand. Greenwood's essay is well illustrated by a number of x-ray positives. W. H. C.

Selective Draft Registrants May Apply for Commissions. The Navy Surgeon General states that there is urgent need in the navy for medical officers and in order to rectify any misunderstanding that may exist is asking publicity for the facts that registrants in the selective draft can present themselves for examination and accept commissions in the navy regardless of their classification and order number, that the navy is in urgent need of men, and that candidates found qualified will be assigned to immediate active duty if desired.

Those candidates found qualified for enrollment and serving as internes will be, so far as practicable, left untouched in order that they may complete such internship. No definite assurance, however, can be given, as this action will necessarily largely depend upon the number of older men enrolled.

The section of the selective service regulations which covers the subject is quoted: "(C) Any registrant at any time, regardless of classification and order number, may be commissioned in the army, navy or marine corps and thereafter, on presentation by the registrant to his local board of a certificate of his commanding officer stating that he has been so commissioned, such certificates shall be filed with the questionnaire and the registrant shall be placed in class V on the ground that he is in the military or naval service of the United States".

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(Incorporated November 1, 1888.)

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The American Review of Tuberculosis is a journal which should appeal to all physicians. It is published by the National Association for the Study and Prevention of Tuberculosis. The first number was issued in March, 1917, and the subscription list now numbers about a thousand. It is hardly necessary to comment upon the purposes and scope of the Review further than to say that it is an outgrowth of a demand for a journal in the English language dealing exclusively with the subject of tuberculosis and disseminating information from every source with regard to the nature, treatment and prevention of the disease. Dr. Henry Sewall of Denver is one of the editorial staff of eight members.

The price of the Review is \$3.00 to non-members and \$2.00 to members of the National Association.

New Remedies Accepted by A. M. A. During January the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion with New and Nonofficial Remedies: Chlorazene Surgical Powder (The Abbott Laboratories); Betanaphthyl Salicylate (Calco) (Calco Chemical Company); Acetylsalicylic Acid-Merck (Merck and Company).

Colorado Medicine

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No. 3

Editorial Comment

UNIVERSAL MILITARY TRAINING.

Thousands of members of the medical profession are doing strenuous work, day after day, in weeding out from among the ten million young men drafted for military service those millions who are physically unfit. Or they are working on some of these unfit, and trying by surgical operations or regimen to repair defects, many of which have come into existence and all of which continued to exist through neglect of well known practical measures, that ought to be universally employed to raise and sustain the health of the community.

A man who had given most of his life to the "practical" interests of business and politics recently went to Washington, where he learned something of this work that is being done by the medical profession of the country. He promptly telegraphed home that Colorado (a state that has always made utterly inadequate appropriations for its health department) ought to have a "health survey" immediately. Not one in a thousand of the community outside the medical profession has even a faint conception of the importance of the health interests of our state and country, as these are forced upon our attention by the present military emergency.

There is danger that in discussion of the questions connected with universal military training, the importance of its influence upon the national health will be overlooked in the clash between the supporters of an "adequate" army and the pacifists. To train the British dwellers in cities to live

an outdoor, wholesome, strenuous, physical life was a large part of the work of preparing Kitchener's armies. But the same training would give results equally valuable for the times and purposes of peace.

More certainly disastrous than the growth of rival nations or hostile alliances is the growth of insanitary luxury, of habits of sloth and physical idleness, or of unbalanced sensation seeking, and the insane dissipation of physical energy among our own people. To gather all young men together for six months of their lives; to compel them to pass through a season of clean, active physical life, to learn to move quickly at the word of command, to make every motion direct, purposeful and exact, to experience the normal succession of active exercise and healthy fatigue; to show them life from this point of view would have a value outweighing the importance of preparedness against foreign invasion.

The physical examination of recruits and the medical care of the men in training camps show how much can be done for the health of the average young man. It is a service that would be worth many times the cost to the country, even if it were paid for at the enormously high rates that are now being paid for the building of cantonments and for many kinds of supplies.

The physicians of the country are alive to the health side of military training. At the meeting of the American Academy of Medicine at New York last June, after the reading by Professor Dudley Sargent of Harvard of a paper on physical training, the following was adopted unanimously:

Whereas the present state of war has brought to public attention the great

need for a higher type of physical development on the part of our people;

Resolved that the American Academy of Medicine urges on the attention of the American people and their representatives in Congress the importance of providing for universal physical training among the children and youth of our country, in the belief that both for its effects on the physique and for its effects on ideals of activity and conduct, it is the most important part of their general education that the state can provide.

And at the meeting of the Clinical Congress of Surgeons of North America, at Chicago, October 25th, 1917, the following was also adopted:

Whereas the experiences of the nation convince us of the necessity for universal military training, to furnish qualified men for defense, to strengthen manhood and mental poise, and to make for a more efficient citizenship; and

Whereas we believe it will democratize youth and furnish discipline, while developing physical force and endurance, and will produce better fathers and workers for the ranks of peace;

Therefore be it resolved that the Clinical Congress of Surgeons at its eighth annual session urges upon Congress at its coming session the passage of a measure along the general lines of the Chamberlain Bill for universal military training, and that the cantonments now used by the national army be utilized, if possible, for such work.

On the adoption of this resolution the vote was also unanimous. Military efficiency has always rested on a basis of sound physical development, and the need of a sound physical basis for any civilization is appreciated by the medical profession. To secure physical strength is the first object and the one that will be chiefly attained by six months training intensively devoted to such purposes.

Let the medical profession point out at every opportunity the advantage of having each young man carefully examined to as-

certain his physical needs; and the truth that, if he is educated in the means of bringing himself and keeping himself up to a high standard of physical health, a good deal of the education will stick, so that his whole life will be better and more efficient.

Universal military training will have to prepare for all the needs of war. If it requires five behind the firing line to sustain one soldier in the field, such training must be broad enough in its scope to provide even for the pacifist and conscientious objector forms of work that will make them harmless and useful. Even these and the "Christian Scientist" would be benefited, along with the rest of the nation. E. J.

VENEREAL DISEASES NOTIFIABLE.

The Denver City Council has recently passed and put into immediate effect the most remarkable health ordinance ever promulgated by the city. Not more than a year ago, perhaps, the passage of such an ordinance would have been impossible. Its recent enactment occurred after scarcely a ripple of discussion.

The new ordinance "to protect the public health and to prevent and restrain venereal diseases in the city and county of Denver" embodies proposals which have been put forward for a number of years, but only by the most radical thinkers in social hygiene. Diseases such as syphilis, gonorrhea, and chancroid are declared to be contagious, communicable, infectious, and dangerous to the public health. Cases of these diseases are subject to quarantine and isolation whenever in the opinion of the manager of health and charity they are a menace to the citizens of the city and county of Denver. A physician having knowledge that any person is suffering from any of these diseases must report the name, address, and occupation of the person to the health manager within forty-eight hours, and a like responsibility rests upon the patient. Druggists or physicians who sell remedies for such diseases must report in like fashion. So also must hospitals or other institutions in which patients are treated for venereal diseases.

It is not unnatural that such an ordinance should create a great deal of criticism and much bewilderment. Physicians are asking themselves how far the law may defeat its own purpose through the patient's fear of disclosure. Many instances will arise in which doubt may exist as to the application of the ordinance. For example, where a patient is under treatment for some condition of which syphilis may be the underlying cause, will a positive Wassermann reaction obligate physician and patient to make the required report? It has already been freely stated that a responsible official has declared that tabetic patients and those suffering from paralytic dementia will not come within the scope of the law. Yet if these diseases are generally recognized as due to syphilis, and especially if the Wassermann test is made and found positive, what will be the ruling of the courts as to the patient or the physician having knowledge that the former is suffering from syphilis?

However desirable may be the end in view, it is almost certain that such an ordinance would not have been passed if the federal government had not "requested the cooperation of all municipalities in suppressing venereal diseases, by the enactment and enforcement of laws for that purpose".

It is to be feared that many patients, shunning the publicity implied in visits to a regular physician, will obtain treatment, of a less efficient kind, from unscrupulous quacks who in some way will be able to dodge the law. It is a matter for keen regret that the Denver city fathers have lacked the courage necessary to give effect to the recommendation of the federal authorities dealing with advertisements of antivenereal remedies in the public newspapers.

It may be that the practical effect of the law will be restricted in the main to the isolation of diseased prostitutes and the compilation of statistics. Yet the former consequence will hardly go very far toward overcoming the social evil.

It is strange that the health interests of a civil population of about one hundred

million people should in time of peace have been inadequate to produce the passage of laws along the lines now being urgently promoted by the federal government; whereas the needs of the relatively small percentage of that population now engaged or soon to be engaged in the pursuit of war as an occupation have been regarded as affording justification for such a measure.

At ordinary times we brand smallpox, measles, scarlet fever and diphtheria as communicable and dangerous to the public health, and in more or less wholehearted fashion we endeavor to restrict the relations between those afflicted with these diseases and the general public. Yet with regard to the social diseases, the evils produced by which are a thousandfold greater than those consequent upon the ravages of the diseases previously mentioned, we have hesitated to take the slightest action for safeguarding the community. Why is this? The reason is that no disgrace is commonly associated with such infections as measles and scarlet fever. On the other hand syphilis and gonorrhea, and more especially syphilis with its power of hereditary transmission, do carry with them the stigma of disgrace, due in the main to their usual mode of transmission. Contracted secretly, and endured secretly through long periods of years, the revelation of their existence is capable of destroying the family, social and occupational life of the individual, who, it must be remembered, may be the clergyman in the most respected pulpit, husband wife or child in the most orderly and moral household, teacher or pupil, governed or governing, and last but not least the legislator who creates the law now under consideration or any one of the officials entrusted with the law's enforcement.

It may well be asked whether the purpose of such a law is capable of fulfillment. It is scarcely likely that legislation of this kind will prove successful until such time as we shall have changed our whole attitude toward the sex question in general and toward sexual diseases in particular; until instead of regarding gonorrhea or syphilis as a crime worthy of punishment, but to be discussed only with bated breath or

ribald laughter, we shall speak of them frankly as the serious plagues and misfortunes that they are, and spread throughout the social fabric a knowledge of their nature and origin and of the necessity and means for their avoidance.

WHAT IS THE WAR ABOUT?

A philosophic analysis of the fundamental principles at issue between Germany and her enemies, from the point of view of a scholar and physician, was presented by Sir Berkeley Moynihan at the sixth convocation of the American College of Surgeons, and has been printed in the bulletin of the College. "War" says Sir Berkeley, "is the national industry of Prussia; it is her means of acquiring wealth". "From the hour when in the midst of peace Prussia laid rude and violent hands upon Silesia, . . . it is by her military successes that she has enlarged her borders, added to her own infertile lands, solidified her gains, and been able to prepare for a still further attack upon her next chosen victim." "No state in history can compare with Prussia in its exploitation of the doctrine of plunder", taking, keeping, "because it has the strength to do so". "The successes of 1864, 1866, 1870 are . . . stupendous not so much in their material results . . . but in their disclosure of a mighty and well-ordered power that seemed to move irresistibly along a predestined path, to a goal which had been long foreseen and calmly and securely chosen".

The principle of tyranny ground into the very fibre of the German peoples "implies a complete surrender of individual rights and liberties, and an unquestioning submission of them to a power exercised exclusively from without, . . . an irresponsible autocracy".

Against this the standard set up by the peoples now at war with Germany is expressed in the word democracy or liberty, by which we mean "the inalienable and indestructible right of every human being to express himself, to be himself, to develop from within". The laws which govern and control a citizen of such a state "are laws which he himself has helped to make, and to

which he, with others like him, willingly conforms not so much because the laws are good, but because they are laws which he and those who have gone before him have in freedom imposed upon themselves".

Since in a tyrannous state every individual must receive for the service of the state such training as will fit him to be a willing and obsequious servant of that state, "the German educational machine is an absolutist machine, a possession of the central authority, exactly as is the navy or the army". Bismarck well said, "he who controls the schools controls the future".

This contention is sustained by the following observations lately published by former Ambassador Gerard from the diary which he kept in Germany before the break between that country and the United States: "The military caste (of which the naval and all government bureaus are branches) has organized the nation for war with the efficiency of the managers of a great American corporation. The government is an absolutism . . . officers of crack regiments do not go to the house of persons in any kind of business. A business man is called a 'Kaufmann' as we speak of a house painter. Some tame professors are paid by the state to give an impression of 'Kultur'."

"Progress in science", says Moynihan, "must depend upon the unrestrained freedom of exercise of all the faculties of the human mind. Of these imagination is perhaps the chief. Imagination is the mother of fact." Germany "has organized and tabulated and made accessible to all peoples the scientific work of every nation; she has indeed been the intellectual clearing house of the world. . . . The best of her is diligence. But her own original contributions to science are . . . the slenderest of any of the great nations of the world. Tyranny is not a force to set ideas in motion."

"If we compromise", concludes Moynihan, "with that which we believe to be a principle of evil, a precursor of moral and intellectual death and dissolution, . . . we are shackling for generations to come the minds and the souls of men; we are failing in our plain duty to humanity."

THE CONSERVATION OF INFANT LIFE.

In the confusion associated with the first year of the European war, the infant death rate in England showed a rather startling increase. This condition of affairs, probably shared at first by all of the great countries at war, was the more alarming because the international struggle also brought with it a reduction in the birth rate. Timely measures to combat the increased mortality brought the rate in England down from 110 per thousand in 1915 to 91 per thousand in 1916. It has been estimated that if the English infant death rate of 1914 had obtained for the last forty years England would have available today an additional 1,300,000 men between the ages of eighteen and forty years.

The most remarkable work in the reduction of infant death rate has been accomplished in the past few years in the British colony of New Zealand. The credit for this work has been largely given to the New Zealand Society for the Health of Women and Children. This society was founded in Dunedin, New Zealand, in which city the infant death rate fell from an average of 80 per thousand for 1900-1907 to 38 per thousand according to the latest statistics. In a similar period the infant mortality of the whole dominion of New Zealand has fallen from nearly 90 per thousand to the latest figure of 51 per thousand.

In 1915 the state of Pennsylvania pleaded guilty to an infant death rate of 110 per thousand. New York City had an infant death rate of 83 per thousand for the first seven months of 1917. Minnesota, with 70 per thousand, has the most favorable state rate in the United States registration area.

Three hundred thousand American children under five years of age die each year. The Children's Bureau of the United States Department of Labor believes it possible to save one hundred thousand of these lives in the course of a year. By a coincidence which was probably accidental, April 6th, the first anniversary of the entrance of the United States into the world war, will be the opening date not only for the third Liberty Loan campaign, but for a campaign

by the Children's Bureau for the saving of children's lives.

The methods adopted for the life saving campaign will follow the educational lines which have proved successful in New Zealand and England. In England, for example, the greatest single factor was probably a great increase in the number of health visitors, women who went into the homes of the people to advise them how to care for their babies and children. New York attributes her own marked reduction in infant mortality to a very definite campaign for education of the mothers. To do this work satisfactorily money must be spent. In England, in spite of the strain of war, liberal grants in aid were made by the Local Government Board to the various sanitary districts, and financial assistance was also given by the government to every private agency of definite standing. It is to be hoped that public and private funds will be liberally and intelligently applied to the attack to be made upon this problem throughout the United States.

In order that each state may feel responsible for the saving of a definite number of lives, each state is assigned a quota to be apportioned on the basis of the population under five years according to the 1910 census; the quota assigned to Colorado being seven hundred and seventy-seven. The campaign will be inaugurated by a national weighing and measuring test, to begin on April 6th.

MORE DOCTORS FOR THE ARMY.

In the light of figures which have from time to time been published as to the number of physicians who have entered the medical corps of the United States Army for the period of the present war, we may well ask whether on a voluntary basis any other section of the community has shown a finer spirit of service in the common cause. Yet the country's need for army medical officers will be far from satisfied by the number of doctors at present enrolled.

From several quarters it has lately been urged that, to fully meet the requirements of the Surgeon General's office for a large

and efficient medical reserve, the entire medical profession of the United States, or at least every physician who fulfills the requirements of the service as to age and physical fitness, should be voluntarily enrolled in the Medical Reserve Corps of the United States Army. The patriotism of this suggestion is unquestionable, but as to the perfection of its wisdom there may be some doubt.

What would be the practical outcome of such an attempt at voluntary enrolment of the entire medical profession of this country? A number of men whose disposition at any time is to respond promptly to a call for united action would offer themselves in spite of the fact that family or other considerations would justify or even demand their continuance in civil practice. Others who for various reasons could much more easily be spared would refrain from placing their names upon the list. Under the voluntary system the needs of the army forbid an official discrimination as to the justice of accepting any given individual. Already there can be no question that here and there men who under a selective draft would have been left at home have been commissioned for army service.

If a much greater number of medical officers must be obtained than have so far signified a willingness to serve, the most reasonable method of obtaining them will be by some special form of selective draft. Under such a system the medical men of the entire country would be classified along lines not unlike those which have been laid down for the fighting forces, that is as to age, civil occupation, whether married or unmarried, the dependency of children, and so on. If the war lasts long enough, with a correspondingly enormous increase in the drafting of men for fighting in Europe, the need for complete economy in the distribution and use of physicians, both as between army and civilians and also as regards the different sections of our civil communities, may require what will practically amount to a socialization of the entire medical profession of this country.

THE PROGRAM FOR THE ANNUAL MEETING.

The Committee on Scientific Work of the State Medical Society is now planning the scientific program for the 1918 meeting. Those who contemplate presenting papers at this meeting are strongly urged to communicate with the chairman or another member of the committee as early as possible.

Many of the active and honored members of the society whose names have appeared frequently and prominently upon the annual programs are now absent in the service of the country. If, therefore, the success of the coming meeting is to be assured, it is necessary that the program bear many new names. Here is a duty and an opportunity.

The subjects of all papers, not necessarily the exact titles, should be sent in not later than May the first. Brief abstracts covering the essential points must be in the hands of the committee on or before June the first, for advance publication in Colorado Medicine. By a provision of the by-laws, no paper may occupy more than fifteen minutes in its delivery.

W. H. CRISP, Denver,
A. G. TAYLOR, Grand Junction.
J. C. TODD, Chairman, Boulder.

LET US HEAR FROM THE COUNTY SOCIETIES.

Reporters of county societies are reminded that Colorado Medicine is anxious to receive reports of local meetings and that they should reach the editor not later than the first of each month. News items concerning individual members or general news of interest to the profession will be appreciated. We cannot know what you are doing if you do not tell us.

Attorney General Leslie E. Hubbard of Denver has ruled that the Children's Hospital is a general hospital within the meaning of the act which provides for the examination and registration of nurses after serving three years in a general hospital. The Board of Nurse Examiners refused to examine nurses from the Children's hospital on the ground that since only children were treated it could not properly be classified as a "general hospital." The opinion was prepared by the attorney general at the request of Dr. H. G. Wetherill, chairman of the committee on nurses, Children's Hospital Association.

Original Articles

THE CAUSES OF IRITIS AND ALLIED INFLAMMATIONS.*

EDWARD JACKSON, M.D., DENVER.

Inflammation of the iris almost never occurs without involvement of structures closely associated with it. It is better to think of such an inflammation as an uveitis, an inflammation involving a portion or the whole of the uveal tract, than to think of it merely as iritis, cyclitis, or choroiditis, according to the part most strikingly involved. Inflammation of the adjoining cornea and sclera is also very closely associated with iritis. Hence, what is said here about iritis applies with equal force to some of these closely allied inflammations.

Iritis and the allied inflammations may be **traumatic** or **non-traumatic**. The former, including the inflammation set up by injury of neighboring parts, may be regarded as a local disease. Non-traumatic iritis is always caused by some remote lesion or systemic condition. Even in the traumatic inflammations the bearing of a remote or general condition may be extremely important, because to that condition a large part of the treatment is to be directed and upon it the result of the local process may depend. However, it is proposed here to deal with the causation of non-traumatic iritis and its allied conditions.

The subject properly claims our attention because it is important and because our information regarding it has been completely changed in the last few years. Ten years ago this statement reflected the general belief and teaching with regard to it:

"Of all cases of iritis one-half are caused by syphilis, one-fourth by rheumatism, including a group of allied conditions of nutrition, and most of the remainder by gout, traumatism, preceding febrile diseases, certain cachexias, gonorrhea, diabetes, and new

growths in the iris, with a frequency diminishing in somewhat the order named".

Four years ago a new text-book by the editor of the *Ophthalmic Review*, putting aside traumatic and sympathetic cases, stated: "We can recognize in the majority the result of some toxic influence. This may be traced to certain definite diseases, such as rheumatism, gout, syphilis, diabetes, etc., or to some obscure absorption from the alimentary tract or elsewhere." But in the last four years many important papers have been published recording experience which throws an entirely new light on this subject. The most important and satisfactory of these papers is on *The Etiology of Iritis*, by E. V. L. Brown and E. E. Irons¹ of Chicago, published last year. It was based on forty-seven private and fifty-three clinic cases in which a "complete physical examination was made to detect the presence of syphilis, tuberculosis, gonococcal infection, and infection of teeth, tonsils, sinuses, prostate, pelvis, or other structures which might give rise to lesions in joints or eyes. Laboratory examinations included Wassermann tests (ninety-eight patients) controlled by prostate, and other infected tissues. Tuberculin tests, using 1, 3, 5, 10 mgm., were made in suitable cases."

The Causes of Iritis in 100 Cases.

The results of their study are shown in the table here presented. The second column gives the number of cases in which only one infection was found. The third column shows the number in which some other infection was present, but the evidence seemed to prove that the disease opposite which the figures are placed was the essential cause. The fourth column gives the totals for the figures in the first two columns, indicating the percentage of cases that could clearly be ascribed for gonococcal infection, radiographs of two laboratories, complement fixation tests teeth and sinuses and of the lungs, where there was any question of pulmonary disease; cultures of pus from tonsils, sinuses, to each cause. But the same infection was

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

¹Brown, E. V. L., and Irons, E. E.: *Trans. Amer. Oph. Society*, v. 14, p. 495.

also present in other cases to the numbers given in the fifth column.

(Brown and Irons.)

	Alone	With Others	Total	Coincident Infections
Syphilis	10	13	23	11
Gonococcus	7	2	9	22
Tuberculosis	8	..	8	16
Dental infection.	7	11	18	23
Tonsillar infection	7	9	16	33
Sinus infection..	1	2	3	7
Genito - urinary (non-venereal)	3	..	3	1
Other infections.	2	..	2	..
No cause found.	1	..	1	..
Combined infection .....	..	..	17	..
	—	—	—	—
			100	113

Thus twenty-three cases of iritis were ascribed to syphilis, but syphilis was present in eleven other cases. These eleven cases were not regarded as due to syphilis, because of the remoteness of the infection (seven to forty-five years), or because by the treatment of other infections the iritis was cured without antisyphilitic treatment; and in several it had not been benefited by previous treatment directed against syphilis. It is to be noted that although syphilis was the cause in twenty-three per cent, a majority of these cases were drawn from charity clinics, and these clinics included the venereal ward of the county hospital; and the proportion of cases of syphilitic iritis among clinic patients was more than double the proportion among private patients.

This very careful study of the subject would seem to indicate that in private practice only about one case of iritis in eight can be expected to be due to syphilis. Perhaps the proportion is even less than this. Among twenty-five cases of such inflammation that I have seen in the last year in private practice, only one was probably syphilitic. But this is not the true proportion. Many of my cases were of long standing—tuberculous, autotoxic, or due to focal infections; cases that are very protracted or re-

current, returning with new attacks or being referred by other ophthalmologists because of the chronicity. Syphilitic iritis more promptly yields to treatment, and with the present current belief that exaggerates its frequency it is much more likely to be treated properly from the start. On these accounts it is not properly represented in my list of causes.

Probably the common belief in the frequency of syphilitic iritis has been based a good deal on the efficacy of mercurial treatment. It ought to be understood that prompt improvement under this treatment, especially under calomel, has no diagnostic significance. This is also true as regards salicylates and aspirin and the diagnosis of rheumatism. Nearly all uveal inflammations are favorably influenced by either of these classes of drugs. The same case may yield quickly to either calomel or a salicylate, although calomel is the drug more generally to be relied on. The point here emphasized is that prompt, satisfactory, permanent improvement under calomel does not justify a diagnosis of syphilitic causation; or even point particularly in that direction.

Rheumatic iritis used to be ranked as next to syphilitic in frequency. But it does not appear in the table of Brown and Irons. In nearly forty years of practice, I have been called only once to see a case of iritis arising during an attack of acute articular rheumatism. I have also seen one case that gave a clear history of such a connection, and one case of syphilitic parenchymatous keratitis with iritis that began during an attack of acute articular rheumatism. Other men of large experience have never seen a case showing any connection between iritis and acute articular rheumatism. It is certain any such connection is extremely rare. With the passing of "chronic rheumatism", rheumatic iritis has disappeared from our classification of iritis.

Focal infection has taken the place of "chronic rheumatism" in the list of causes. It is still an indefinite term, covering a large part of the same ignorance as its predecessor; but it is a step forward that is leading to others. The view that focal infections cause iritis rests partly on the fact that they

cause those chronic conditions of the joints, ligaments, and other mesoblastic structures that have been associated with iritis. But still more it rests on the cure of recurring iritic attacks by removal of some focus of infection, especially those foci found in or about the roots of the teeth or in the tonsils. The number of such cases reported in the last few years is large, and some of the case histories point very strongly to a relation of cause and effect.

How many of these cases occur it is impossible to say. Brown and Irons ascribed to miscellaneous focal infections five cases, in addition to sixteen cases in which the focus of infection was definitely located in the tonsils; eighteen cases in which it involved the teeth, and three in which it was located in the nasal sinuses, making forty-two per cent of their cases having such an origin. Among my twenty-five cases, six are regarded as clearly due to focal infections, of which three were dental, two tonsillar, and one due to infection of the nasal sinuses. It is probable that some of the cases noted as of uncertain origin belong in this class and we do not know if any sharp line should be drawn between these and the cases of gastro-intestinal toxemia.

These cases of iritis due to focal infection raise some of the deepest and most obscure questions regarding etiology. To what extent is the iritis due to a colonization of the pathogenic organisms within the eye? To what extent is it due to toxins formed elsewhere and carried to the eye? The weight of evidence seems to show that the organisms are actually present in the inflamed tissue; at least this has been proven to be true in some of these cases, and the absence of such organisms has not been proven in any case. Yet to what extent toxic influences are necessary to establish the organism in their new location is uncertain.

The particular organisms present in iritis are usually cocci. Both staphylococcus and streptococcus groups are represented. The experimental work by Rosenow, confirmed by Brown and Irons, and Nadler, seems to show that certain strains of streptococci are especially likely to cause iritis.

The whole subject of focal infections is

still so indefinite that much laboratory work, both experimental and clinical, should be done upon it in the near future. But the cases of iritis cured by removal of such foci of infection prove its great practical importance.

Tuberculosis is the cause of many cases of uveal inflammation that were formerly not recognized as being due to it. Brown and Irons found eight per cent of their cases due to this infection alone. Of my twenty-five cases, four were pretty clearly tuberculous, but for the reasons stated above this proportion is unduly high. An important point in this connection is that these cases are just as likely to occur in patients who have not previously been recognized as tuberculous, as in those who show obvious tuberculosis in other organs. It must also be borne in mind that no single specific test for tuberculosis is wholly reliable. Such tests are of great value, but no one of them can be trusted to wholly decide the etiology of iritis.

Gonococcus infection is a cause of iritis that has long been recognized, but its relative importance was greatly underestimated. In my series there was but one case due to this cause. But Brown and Irons ascribed nine cases to gonococcal infection, in only two of which was any other infection present. When we remember the proved fact that a focus of gonococcus infection may persist for twenty, thirty, or even forty years, and consider the large number of chronic cases of arthritis with which iritis is associated, there is reason to suspect that the proportion shown by these statistics is not too high.

Gastro-intestinal autointoxication has of late years been recognized as an important cause of iritis, and treatment based upon this view has been markedly successful, so that we might claim the diagnosis established by the therapeutic test. Of my twenty-five cases five were put down as due to this form of poisoning. It will be noticed that this cause does not appear in the Brown and Irons table, and what they have to say about it is very suggestive:

"Seven cases came to us with a provisional diagnosis of 'iritis from autointoxica-

tion'. In none of these did we fail to find active infectious processes, such as tonsillar or alveolar abscess, and the previously resistant iritis subsided on relief of the infection without specially directed treatment of the supposed gastrointestinal autointoxication. . . . There is no question as to the importance of the regulation of diet, of the correction of constipation, and of all other measures which will improve nutrition and increase bodily resistance to infection, but even these important procedures should not be allowed to supplant or interfere with the search for and the eradication of infectious foci." This, like the subject of focal infections, still needs much investigation to render it more definite. But it can hardly be accepted yet that the one explanation has entirely superseded the other.

Diathetic conditions are not mentioned in the table of Brown and Irons, but one of my cases is set down as diabetic in origin. It is quite possible that in association with diabetes there may have been some overlooked infection. The susceptibility of diabetics to boils gives probability to such an origin. However, we cannot accept in this direction an unproved hypothesis, and there is other evidence to indicate the importance of diathetic conditions in causing iritis.

Bordley has reported a series of cases of malignant uveitis, that is, uveitis recurring in spite of ordinary treatment, in four of which good results were obtained by the use of thyroid extract. The suggestion is an important one, and although this class does not constitute a large proportion of our cases of iritis, it should be borne in mind. I have now under observation one case, classed as of doubtful etiology, in which the general condition of the patient is suggestive of myxedema, and in which thyroid feeding is being tried.

Doubtful Etiology.—In the table quoted we find seventeen cases of combined infections, and of these eight were syphilitic, nine gonococcal, seven tuberculous, eight dental, thirteen tonsillar, five sinus infections, and one genito-urinary. It is stated that in twelve of these patients recovery followed the removal of infectious processes, one was slowly improving under tuberculin, and

two, suffering from secondary glaucoma, showed no improvement; while in two the eradication of the infection was not complete. In one of their cases no cause for the iritis was found. In my series I have left six cases in doubt as to etiology. Probably these belong under the head of focal infections, including gonococcal, or to gastro-intestinal intoxication.

It must be recognized that even the most careful investigation leaves the etiology of iritis in doubt. But all recent evidence supports the view previously held by ophthalmologists that all cases of iritis not due to trauma, or previous inflammation of adjoining parts, are due to extra-ocular causes. In iritis, as in most diseases, the most important part of the treatment is the removal of the cause.

The curative treatment of iritis is chiefly extra-ocular. It belongs at least as much to the internist or the general practitioner, as to the ophthalmologist. When a case of iritis is referred to an ophthalmologist by a general practitioner who has made no effort to discover its cause, it may be the first duty of the ophthalmologist to whom the case has been referred to call in some other practitioner, or consultant, to help him in the investigation of the case; and in pursuing such a course he gives the colleague who referred the case to him no just ground for complaint.

In Conclusion.—The present state of our rapidly changing knowledge of the etiology of iritis indicates that it is most frequently due to focal infections, and especially those connected with the teeth. After this cause in frequency come certain specific diseases, especially syphilis, gonococcus infection, and tuberculosis.

The first duty of any practitioner with regard to a case of iritis is to ascertain and remove its cause, or treat its cause and secure as far as possible a removal of its deleterious influence. The broad scope of the investigation needed, indicated in the passage quoted from Brown and Irons describing their own work, is shown by the long list of the essential causes that may be responsible for the attack.

318 Majestic Building.

DISCUSSION.

E. R. Neeper, Colorado Springs: This subject has been handled so well by Dr. Jackson both from the present state of experience generally and from his individual work that I feel it quite unnecessary to touch on these points, and my discussion must be of my personal experience rather than from a general standpoint.

My attention was directed this morning to the case of a married woman, twenty-nine years of age, who a week ago developed an inflammation of the eye which proved to be an iritis. I saw her for the first time this morning. The causal factor was different from anything Dr. Jackson has mentioned, and it is a parallel case to one I had two and a half months ago. In each of these cases the iritis appeared during the menstrual period, and in each case the menses were delayed. This married woman developed iritis four days after the appearance of the menstrual flow. I have not had a case of this general nature before except in a married woman a number of years ago who had repeated mild attacks of iritis. There seemed to be no other element than a good deal of dysmenorrhea in her case, but not a suppression of the period, and the attack of iritis appeared almost every month.

Speaking of cases of articular rheumatism, our president will remember a patient who had three attacks of iritis associated with articular rheumatism, and there seemed to be no other cause for it. I had a case a few months ago of an unusual causation not touched on by Dr. Jackson. The patient was tuberculous, was doing well, and the larynx seemed to be the most involved. The patient was put on sun baths, and as these baths were increased up to eight minutes there began to develop considerable inflammation in one eye, and when they were extended to twelve minutes iritis developed. The photophobia was so great that sun baths were dispensed with temporarily and the case readily yielded to iritis treatment. However, as soon as the patient went back to the sun baths iritis again developed. There was no special protection of the face nor the eyes. It was suggested to me that there should be some protection of the face. They again started and rapidly increased the number of minutes for each sun bath, and gave them over a long period (I do not know just how long they were taken), the head being covered completely, and there was no recurrence of the iritis. It looks as if the sun bath, with exposure of the face, was a considerable element in producing iritis.

Dr. Jackson spoke of the importance of locating the focus of infection and treating it. That is certainly an ideal procedure, but while these investigations are being made to general practitioners I would speak a word of warning for the use of atropia, and for its persistent use in strengths varying from the standard weak solutions up to the solid atropia. It is our sheet-anchor while we are searching for the causal factor, and I would like all general practitioners who feel reasonably competent to make the differential diagnosis between glaucoma and iritis to throw their weight on the side of atropia early in these cases to prevent synechia as well as to shorten the attack of iritis.

Frank R. Spencer, Boulder: As usual, Dr. Jackson has left very little for the discussion of this subject. However, there are several things I would like to emphasize. First, the importance of finding the primary focus of infection, as iritis is usually secondary to infection elsewhere in the

body, as Dr. Jackson and many others have mentioned. As investigation of the etiology often falls to the lot of the family physician, it behooves him to examine carefully for infection in the gall-bladder, appendix, and genito-urinary tract. In men an acute or chronic urethritis is liable to be the cause, and in women an acute or chronic urethritis, and especially a chronic pyosalpinx. The chronic foci of infection of the female pelvis are by no means always easy to diagnose. The tonsils, the teeth and accessory sinuses should be thoroughly examined and x-rayed. The teeth, or even the sinuses may be normal upon physical examination so far as we are able to determine; yet an x-ray may show a pocket of pus at the root of one or more of the teeth, and in one or more of the accessory sinuses. In several cases in which removal of the tonsils has yielded disappointing results, this would perhaps have been less liable to have happened had a more thorough investigation been carried out before a tonsil operation was advised.

With our present knowledge of focal infection and with the research work of Billings and Rose, now at our disposal, it is easier to investigate these cases than when we formerly depended almost entirely upon tuberculosis and syphilis as the etiological factors. It seems to me we have allowed the pendulum to swing a little too far, however, in favor of focal infection, as perhaps we are not enough on the alert for syphilis and tuberculosis. I don't mean to imply by this that we should disregard the importance of focal infections, but that we should consider focal infection, syphilis, and tuberculosis, just as we formerly considered syphilis and tuberculosis to be the very important things. Personally, I have a Wassermann test and a tuberculin test for every patient showing uveitis. In addition to this, I prefer to have the other tests made as stated above.

Recently, I have had a patient in whom repeated examinations by a number of oculists from time to time have failed to reveal anything except gastrointestinal disease to account for the recurrent attacks of uveitis. The patient has visited the Mayo Clinic without receiving any more relief than in the hands of others. Of course, the possibility of some obscure chronic infection must be considered outside the gastrointestinal tract.

Melville Black, Denver: Certainly, it is a great relief to lose our old friend rheumatism. It has been the bugbear of the medical profession for many years and an absolute confession on our part of ignorance. I remember very well when I first began to teach ophthalmology that our textbooks were full of the subject of rheumatism as a cause of iritis. I remember when I began teaching it was almost impossible to swallow it because it did not seem to have a rational basis in the causation of iritis. I never have seen personally a case of iritis associated with acute articular rheumatism. There may be associations, but the etiological factor of iritis is the same as the etiological factor of a rheumatism, and not the rheumatism the cause of the iritis. We understand now the etiology of these old chronic rheumatisms, so-called, and the same etiological relationship applies there with regard to the iritis.

The treatment of this condition was not touched upon by Dr. Jackson, and it will be unnecessary to bring it up in the discussion. I quite agree with Dr. Neeper that for the general practitioner it is exceedingly important to remember that atropin is indicated from the beginning of the process until it is absolutely well.

James J. Pattee, Pueblo: No doubt, all of us

were very thoroughly trained in the relationship between rheumatism and iritis in our early training, as stated by Dr. Jackson. About ten years ago I was very much impressed by the first strong contradiction of that teaching by Mr. Treacher Collins, one of the leading oculists in London. Mr. Collins said that he doubted very much the causative relationship of rheumatism to iritis, which was so generally accepted at that time. For that reason he asked the assistants who were in charge of the rheumatic patients in the hospital with which he was connected in London to make an investigation of a large series of cases. Mr. Collins visited the wards with a staff of assistants and practically never did they find rheumatic iritis. He observed that many cases of iritis gave a history of gonorrhea, present or past. He then asked the physicians connected with the genito-urinary department to determine if there was any connection between rheumatism and acute gonorrhea, chronic gonorrhea and the recrudescences of gleet and they found there was a close direct relationship.

Since my attention was called to this, I have borne it in mind and my case histories have verified the doctor's opinion that rheumatism had very little to do with the causation of iritis, while gonorrhea is a frequent cause.

Dr. Jackson referred to the joint paper of Doctors Brown and Irons. Their article is the most classical contribution upon this subject yet offered by our specialty. It is worthy of the careful conscientious study of every man who is interested in the relation of focal infections to constitutional disorders.

Dr. Spencer called attention to the great importance of local infections from genito-urinary organs, gastric ulcers, tonsils, pharynx, etc. These are all analogous and are similar to other infections from local foci prevailing in other departments of medicine.

Brown and Irons found in quite a large percentage of syphilitics having iritis that antisyphilitic treatment failed to improve the eye; that the iritis could be traced to local infections of teeth, tonsils or urethra; that cure of the focal infection was followed by recovery of the iritis. They emphasized the fact that in many syphilitics we should not stop with antisyphilitic treatment alone but most often resort to the removal of local infections.

William H. Crisp, Denver: As regards focal infections, it has seemed to me that an iritis or uveitis due to a focal infection was particularly apt to be sluggish in its course, and was also very apt to exhibit periods of relative recovery and periods of decided exacerbation. In some of these patients the condition develops very slowly, and sometimes a patient has such a mild condition that he does not pay much attention to it. Sometimes, however, the case lasts a long time and the ultimate result is more disastrous than in some of the more acute conditions.

As regards tuberculosis and syphilis, the prevalence of these diseases is so great that it is always well to remember that we may have these diseases present without them being the etiological factors. Often there may exist, especially in a tuberculous patient, focal infections as regards the teeth or the tonsils. Many of these delicate patients have lowered resistance in all parts of their body, and this lowered resistance expresses itself in the teeth by rapid destruction of the dental tissue and the development of the streptococcus viridans, which is the particular agent which

is probably most commonly active in focal infections around the teeth.

An interesting point that I have never seen discussed as regards iritis, or rather as regards the larger field Dr. Jackson covered, which is really uveitis, is the relationship of uveitis and cyclitis to what we have been designating an episcleritis. It has seemed to me that frequently the condition we call episcleritis or scleritis, an inflammation either of the fibrous tissues upon the surface of the sclera or of the sclera itself, is really due to a disturbance of the ciliary body or uveal tract, and it has further seemed to me that a number of these cases which we think of as related to the sclera or episclera are fully as well treated with atropin, and that atropin is as beneficial in these cases as in the cases which we usually interpret as iritis or uveitis.

H. A. Smith, Delta: I wish to speak of the endocrine system, the glandular system. The pituitary is in close sympathy with the eye. In fact, the eye probably is affected indirectly oftener than any one organ.

In talking about the cases that are chronic and recurring, as Dr. Crisp and Dr. Spencer did, in some of these cases we are not satisfied in having found the focus of infection, but we will investigate the endocrine system, and if we decide one is deficient in secretion, we will be able to relieve some of these cases immediately, and our old friend autointoxication will go the way of our old friend rheumatism and we will consider more the disturbances of the internal secretions. There are a few cases in which intestinal absorption is the cause of the iritic condition or allied inflammation; but we are covering up a lot of ignorance when we say that autointoxication, except in a few instances, is the cause of iritis. The thyroid is disturbed, the adrenals are disturbed, and the ovaries particularly. You take a woman forty to fifty years of age and she may complain of some eye condition. She may have a recurring inflammation of the eye. I might cite the case here of a woman who had been having, for three years, inflammation of the sclera, with very slight involvement of the ciliary body. I do not think the iris was involved at any time. She would always have more or less involvement of the sclera at the time of the menstrual period. Her eyes were uncomfortable. She became very nervous. I put her on two grains of ovarian extract, three times a day, and inside of three days she was completely relieved. Inside of a week her family wanted to know what I had given her. She bought 500 tablets, and as long as she took these tablets her ocular condition was all right. At the menstrual period she rests, and takes a few more tablets. The direct result from the ovarian extract in this case was remarkable, so remarkable that I hardly expect you to take it at its full face value until I tell you some more about it next year. I have had her under observation for three months. If she goes without taking these tablets she has trouble, but the condition of her nervous system is entirely relieved while she is taking them.

Referring to the title of the paper, it is clear to us that it is a true inflammation of the iris. The eye becomes very red. It is a classical definition for inflammation. This woman's eye gets very red and painful. She has to stay in the house. She cannot read. Her vision is 20-20ths. Take a patient who is suffering from eye trouble, with low blood pressure, with nervousness and pain in the supraorbital region, who is languid, the trouble

is probably not neurotic in origin, but due to disturbance of glandular secretion.

John A. McCaw, Denver: I would like to mention one point that has not been referred to in the diagnosis or the differential diagnosis of these cases of iritis. In the discussion of the paper of Drs. Irons and Brown before the American Ophthalmological Society, Dr. Weeks of New York called attention to the fact that in tuberculous iritis you will find tuberculous nodules in the ciliary circle of the iris, because in tuberculous iritis the patient may not have any active tuberculosis that you can find, and in all these cases we ought to look for these nodules because treatment would then be entirely different. While you may use atropin, you should also use tuberculin.

Dr. Jackson (closing): As you realize, I used up all the time I was allowed on my original paper, and as the discussion has shown, I did not cover the subject. The point I want to make with reference to the list of causes of iritis is that the discussion illustrates the very breadth the investigation ought to take in any case of iritis or allied inflammation.

THE CARREL-DAKIN SOLUTION AND ITS APPLICATION.*

R. W. CORWIN, M.D., PUEBLO.

When the title of this paper was given to our secretary, Dakin's solution and Carrel's treatment were not so familiar as at present. It was thought they were of sufficient importance to present to the profession at this meeting, but, since then, they have become more or less common and have lost some of their novelty. Recently, however, many improvements have been made that are important and interesting, hence, the excuse for this paper at this time.

Returning home from Compiègne full of enthusiasm, naturally many of the good things learned were introduced at home, namely:

Dakin's solution, Carrel's technic, daily microscopic examination of smears from wounds, Blake's supports, Depage's ambulatory fracture splint, paraffin treatment for burns, etc.

When war was declared in 1914, and for two years after, the antiseptic treatment of wounds in France consisted of the use of iodine, bichloride of mercury, permanganate of potash, peroxide of hydrogen, etc. But it was well known all these failed to abort or prevent infection in every case, and in some cases destroyed healthy tissue. It was

also known that every wound on the battle field was septic; that eighty per cent of all amputations were due to sepsis. Treatment that would abort infection in wounds, disinfect septic wounds, and not destroy normal tissue was demanded. Dr. Dakin furnished the article and Dr. Carrel the method of application.

The marvelous results from the Dakin-Carrel treatment were sufficient to justify venturing the statement that possibly the last word in wound treatment had been said, and that now it was a matter of conscientious preparation and preservation of the neutral hypochlorite, daily microscopic observation of the character of the pus from the wound, and perfect technic.

When we were satisfied with the rapid healing of wounds and returning the afflicted to their work in less than half the time formerly taken, a letter was received from Mr. John D. Rockefeller, Jr., enclosing one from Dr. Dakin giving particulars regarding a new preparation, dichloramine-T. It was not a surprise; it was a shock, and it was soon learned that the last word had not been said.

Perhaps it may be pardonable to review hastily a treatment that has directly or indirectly revolutionized the care of wounds in the surgical ward.

Hypochlorite of sodium is not new. In one form or another it has been known and used as a disinfectant and antiseptic for decades, but that known as Dakin's solution is new in the treatment of wounds and occupies a unique position in surgery. The formula for preparing Dakin's solution is too long to incorporate in this paper, but it has been written and posted here and may be copied by those interested. The solution properly prepared, preserved and applied will sterilize infected wounds without injury to normal tissue, and the time required for the perfect sterilization may be so accurately calculated that the healing time of any wound may be definitely stated long before the wound is healed.

Every hospital today should have a chemist as well as a pathologist, and one of the chemist's duties should be to prepare and

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

preserve Dakin's solution and make the different percentages of dichloramine-T.

To conserve time, you will pardon statements instead of detailed description.

Experimentally, pus is rapidly destroyed by hypochlorite, but if the hypochlorite solution is permitted to decompose, as it may do in a wound as well as in a laboratory, and then come in contact with pus, it becomes a medium and promotes the development of pus. It has been proven that in the same wound, one portion may be sterile and another septic at the same time. The portion that is constantly treated with the solution will rapidly become sterile and take on a healthy appearance. The portion of the wound that the solution fails to reach, or covers only part of the time, becomes decomposed, fosters growth of pus, and pyogenic micro-organisms are increased; hence, the necessity of fresh solution being in contact with all parts of a wound at all times as long as pyogenic organisms exist.

Hypochlorite is not to be used as a mechanical agent. It is more efficacious than salt solutions, and apparently better than any other preparation that has been given to the profession up to this time. There seems to be no danger from prolonging its use in a wound. If introduced, however, into the circulation by injection, it destroys red corpuscles and becomes a dangerous agent.

The preparation of the wound is of no less importance than the preparation of the solution. Carrel advises thorough exploration of all parts of the wound as soon as the patient is received, unless there be some special reason on account of shock or otherwise for postponing exploration. All foreign matter, shot, shell, clothing, useless bone, clots, necrotic and sloughing tissue, should be removed. The wound should be freed as far as possible from all substances that may help to produce or harbor pus germs. It is important that this be done early. Any delay may be serious—even a few hours delay may defeat rapid healing, to say nothing of causing loss of tissue, limb or life.

Carrel's paraphernalia consists of:

Rubber tubes of various lengths and sizes to disseminate the solution. These are closed at one end, having at the distal portion many punctures, so small that the solution, rather than flowing through, appears as perspiration on the outside of the tubes. The tubes may be covered with Turkish toweling.

Reservoir for holding the solution, or, instead of using a reservoir, a sufficient amount may be introduced into the tubes by a syringe.

Long tubes.

Couplers and snaps to regulate the flow.

Forceps, scissors, receptacles, dressings and rubber gloves.

After cleansing the wound, it is most important to place the tubes in the wound or on the wound, if superficial, in such a manner that every portion of it will be slowly but constantly saturated with the solution. The wound should not have counter openings or drains. Counter openings are almost sure to defeat the important principle of constantly moistening the entire surface of the wound. Counter drains or openings tend to promote currents that conduct the solution in channels so that portions of the wound's surface are deprived of its constant application.

The next and most important step is the taking of smears from different parts of the wound in order that accurate information of the condition of the wound may be constantly known. These smears should be taken at least as often as every other day and, with the aid of the microscope, there is no excuse for not knowing just what progress the wound is making.

There are many additional facts that might be considered, if time permitted. They may be learned, however, from Dr. Carrel's recently published book.

In closing, it may not be out of place to mention the following:

The tubes should be so placed that the flow will not be uphill but always downward.

None of the openings of the tubes should be above the edges of the wound. If the solution flows out upon the skin, it sometimes irritates and causes dermatitis. This

may be prevented, and is best treated, by the application of sterile vaseline.

The wound may be packed, if found desirable.

It is of importance to learn the technic of handling and applying dressings. This is not easy to describe, but may be readily learned by experience.

The results of the Dakin-Carrel treatment have been remarkable. Now Dr. Dakin has presented us with another solution, termed dichloramine-T, which in some respects is an improvement over former preparations. Whatever may be the advantages of dichloramine-T, much of Carrel's technic will continue to be of benefit.

Dichloramine-T is a compound consisting of toluene-parasulphondichloramine. It may be used in strengths varying from one to ten per cent dissolved in chlorinated eucalyptol. In this form, it is stated, it may be kept in a colored bottle indefinitely. It will retain its germicidal efficiency in a wound for eighteen to twenty-four hours. This new preparation contains an oil which makes the use of tubes unnecessary. It retains germicidal properties longer than the first solution so that it is unnecessary to redress the wound oftener than every eighteen or twenty-four hours. A letter recently received from Dr. Lee speaks highly of this preparation and its use at Minnequa is giving gratifying results.

Dichloramine-T has been found excellent for burns as well as for other wounds. While it is not so soothing as ambrine, it eliminates the offensive odor that is so objectionable to the war paraffin treatment. It is free from marked irritant properties, and is said to be twenty times more efficient than hypochlorite.

This paper may be brought to a close by making the following statements:

1. The new Dakin solution has advantages over the first solution.
2. The Carrel tubes are unnecessary with the new Dakin solution, but the Carrel technic of handling dressings is no less important.
3. The Carrel plan of daily microscopic examination of the pus must not be neglected.

4. The application of dichloramine-T may be made by spray, syringe, or atomizer in and upon the wound. Apply a dressing and repeat in twenty-four hours.
5. Inasmuch as chlorine has a tendency to dissolve clots, arteries should be carefully ligated before applying the chlorine solution for fear of secondary hemorrhage.
6. It is stated that dichloramine-T will reduce by sixteen per cent the average healing time with hypochlorites, which means that healing of wounds takes place in sixty-six per cent less time today than by the treatment in vogue a year ago.

Has the last word been said?

Minnequa Hospital.

DISCUSSION.

Frank Finney, La Junta: Unfortunately, I did not get to hear all of Dr. Corwin's paper, because I was expecting to hear it read later in the day, but I have no doubt the doctor covered the ground very thoroughly as he generally does.

In regard to the use of Dakin's solution, which is the title of the paper, I will say that we have used it in our industrial surgery at La Junta Hospital quite extensively during the last year, and we have found it quite satisfactory in the treatment of dirty wounds, in cleaning them up, especially where there was sloughing of tissue. We have found that we had to protect the healthy skin from irritation that is produced by the solution. It causes an itching irritation, but in all of the cases in which we have used it we have found it cleans them up very quickly.

About two months ago I had a case of anthrax poisoning in which I used Dakin's solution with a very good result. There was very rapid localization of trouble, which was in the hand and forearm. The case was an ugly one when it came into my hands, having been under partial treatment for about a week, and the hand went on with very much tumefaction and blebs underlying necrotic tissue and the superficial fascia. I opened it up in a number of places and kept it saturated with Dakin's solution and cleaned it up in a week's time.

We have found in all crushing injuries we have to treat, and we have many of these in railroad work, that it cleans them up a little better than anything we have tried. We have had in the past what we think was good success in moist dressings with seventy-five per cent alcohol. In all crushing injuries we find that large moist dressings are the things to clean them up, and we have had very satisfactory results from the use of the Dakin's solution in those cases.

S. D. Van Meter, Denver: I have been very much interested in Dr. Corwin's paper, and have followed the literature on the Dakin-Carrel solution ever since it came out. There is a point which I think the profession should not forget when considering this method. Dr. Corwin touched slightly on this in saying that he reversed the order of the names, i. e., the so-called

Carrel-Dakin solution to Dakin-Carrel solution. The profession is prone to give that man the most credit whose name is prominent in present-day discussions of the subject. I have, in reading the literature of the last few years, seldom seen the name of Semmelweiss mentioned, and I have no doubt there are a number of men who are not familiar with the older literature on the germicidal power of hypochlorous acid, nor with the history of Semmelweiss's use of chlorinated lime as a hand disinfectant. As professor of obstetrics in Vienna at that time, he insisted on his students cleansing their hands with Labarraque's paste before going from the dissecting room to the obstetrical ward. He was the first therefore to use this agent. You will pardon my referring to this incident because I am satisfied there are a large number of men in the medical profession who have forgotten the fact, as we see so little mention made of it in recent literature. His ideas were branded as heterodox by the profession. He was expelled from the faculty of the University of Vienna on account of his views, went to Budapest, and died of a broken heart. Today there is a monument in Vienna to mark his memory and his original ideas on disinfection, but Semmelweiss died before it was erected.

The lesson taught by these things is that the originators and pathfinders in medicine should receive their due credit for what they have done, and their names should not be overlooked in the bestowal of praise. Within the last few weeks we have been told that the good old balsam of Peru, long known as a most efficient first-aid remedy, has been revived by a Frenchman. You will find perhaps that it can be used with as great satisfaction and popularity in the treatment of ragged infected wounds as the Dakin solution. It is more practical, easier applied, and in certain instances, where we have no hospital facilities, it will be found preferable to the Dakin-Carrel solution.

B. B. Blotz, Rocky Ford: Certain members of the medical profession are lacking in the recognition they show towards their fellow practitioners. Five or six months ago I visited the hospital in which Dr. Corwin works, and I was agreeably surprised at the marked attention the staff gave to me as a visiting physician in showing me the details of the method Dr. Corwin has so well described.

The other thought that came to me at that time was the progressiveness Dr. Corwin displayed in the work at his hospital. We very seldom find a man of his age that will go to the expense and make the self-sacrifice which he did to learn this method in the first place, and secondly to place it before the medical profession of Colorado. The work which I saw at the C. F. and I. hospital in Pueblo was a revelation. It was everything that Dr. Corwin says and more. The cases he showed upon the screen were not selected cases. I went through the wards of his hospital in which you can see today more traumatic surgery than in any other hospital in the state of Colorado. The fracture cases I saw were interesting. There were cases of compound fracture brought in from distant camps, infected, dirty wounds, in which this method was used, and in many cases there were immediate surgical operations on bones in the presence of every possible infection, and the results were startling. Whether or not the Carrel-Dakin method or the Dakin-Carrel method, as the doctor wishes to call it, is a decided success in itself, it is successful in one thing, and that is, it is a step towards scientific advancement in medicine. Whether or

not any one deserves credit for bringing forth the chlorine preparations previously I will not discuss, but I will venture to say that we are enabled to apply this method scientifically, and one of the shortcomings of our profession is that we do not standardize things. There is too much guessing in connection with our work, and we do not work along the line of scientific research as much as we ought to do.

I wish not only to thank Dr. Corwin for the presentation of his excellent paper, but to congratulate him on the fact that he took it upon himself to go to France and learn this method first hand and gave it to us as he has.

R. W. Corwin (closing): I am afraid my friend Dr. Blotz has been hypnotized. He has told you some of the truth but not all of the truth. I wish to thank him, however, for what he has said.

With regard to the remarks of Dr. Van Meter, in my paper I stated that this is not a new preparation; it was used years ago, as you know. Time would not permit me to go into details as to how long this preparation has been used, but it was probably used in some form two or three hundred years ago.

In reference to the remarks of Dr. Finney, I have seen much of the wonderful surgical work in his institution. He does better work than I; he has better facilities in many respects than we have. His son is also a splendid doctor.

The new Dakin solution may be used to advantage in place of the paraffin treatment for burns. This solution does away with the very offensive odor, so objectionable with the paraffin treatment, and it heals the wounds as rapidly and satisfactorily as does the paraffin.

At our hospital we do our utmost to prevent smells, dirt and noise. A doctor who roars out at his patient should be and is, at Minnequa, politely requested to be quiet. Squeaky shoes and starched skirts are not tolerated. This means much toward the comfort of the patient.

A STATE-WIDE PROGRAM IN VENEREAL DISEASE.*

C. G. HICKEY, M.D., DENVER.

Five years ago any serious consideration of the matter of venereal disease would have been counted largely a question for moralists and idealists and the hope of any wide national program looking toward the suppression or curtailment of such diseases would have been put down as the dream of an enthusiast. But today conditions are widely different. This country has entered upon a great war, the successful prosecution and the ultimate favorable termination of which demand that all the resources in men and in means shall be furnished under conditions of greatest efficiency. Today there exists a military necessity which has

*Read before a conference of local health officers, presidents of county societies, and officials of the Rocky Mountain Public Health Association, Denver, February 21, 1918.

arisen out of the circumstances attending the gathering of a large army and which will not permit without protest that this body of fine men shall give less than their best to the conflict because of the prevalence of venereal disease.

Therefore it is not strange that there has come from Surgeon General Blue of the United States Public Health Service and from the Council of National Defense to all state boards of health over the land an appeal which is almost mandatory in its character for a definite program to be set in operation in each state such as shall result in the lessening of these diseases.

Do you know that with the mobilization of the men composing the new national army the prevalence of venereal disease in the army increased by leaps and bounds until there have occurred, as shown by the reports of the Surgeon General, about five times as many of these diseases as of all other communicable diseases combined, excluding measles but including pneumonia, dysentery, typhoid, paratyphoid, malaria, meningitis and scarlet fever? I hold in my hand a diagram prepared from reports to the Surgeon General showing that while the annual rate for venereal disease for the years 1915, 1916 and 1917 for each thousand men was eighty-four, ninety and eighty-eight respectively in the regular army, there were reported for the new national army for the week ending September 28, 1917, three hundred eighty-eight cases for each thousand men—a number in ex-

cess of one-third of the enlisted men.

Now what does this mean? It means that if this high incidence in the occurrence of these diseases continues the value of our national army as a fighting force "somewhere in France" or wherever they may be must be largely discounted, for a gonorrhea apparently cured by treatment will be in grave danger of breaking out again under the trying conditions of actual war after these men have been trained and transported across the water at a total expense of fifteen hundred dollars per man and they will there become a drag and a burden to our forces in the field.

It is the business of the nation to help win the war and it is particularly the business of those who have some relation to public health to do their part in helping to win the war. How we may serve has been indicated in the communications from Surgeon General Blue and the Committee of National Defense, before referred to.*

Along the lines suggested by these communications there has already been undertaken in many states, through their Boards of Health, a program of active service. Notable among these states are Ohio, Illinois, New Jersey, Minnesota, Pennsylvania, California and North Carolina; the chief large cities like Chicago, New York, Philadelphia, St. Louis and others also have their programs. The state of California alone has made an appropriation of sixty thousand dollars for a two years' program of this character.

*The United States Public Health Bureau and the Council of National Defense, working in harmony with the War and Navy Departments, have prepared for the guidance of state health departments throughout the nation eight general measures for the control and suppression of venereal diseases, as follows:

1. Establishment of a bureau of venereal diseases of the state department of health with an adequate personnel.

2. Provision throughout the state, or at least in principal cities, for the suppression of prostitution, also for the arrest and examination of prostitutes and the isolation and treatment in public institutions of those affected.

3. Provision for the commitment to institutions of non-diseased prostitutes for industrial training and for the commitment of all feeble-minded prostitutes to custodial care.

4. Provision for the reporting of syphilis and gonococcus infection by physicians throughout

the state (according to regulations which protect both the patient and the public) and for the compulsory and systematic treatment of all infected persons when necessary for the protection of the public health.

5. Establishment, at least in principal cities, of venereal disease clinics and advisory stations.

6. Provision for the posting of venereal disease placards in barber shops, Y. M. C. A.'s, and in men's lavatories of hotels, railroad stations, and in similar places throughout the state and the distribution of pamphlets of information.

7. Provision for lectures (with or without stereopticon), and the display of educational exhibits under the auspices of the State Board of Health or other agency before business men's organizations, employed men and boys, fraternal and professional organizations, employed women and girls, women's clubs and other groups.

8. Provision for the elimination of advertising specialists in men's diseases and the sale of venereal disease nostrums.

The State Board of Health has accepted as its program, in so far as it is able to put it into action, the outline which has been suggested and for this it asks your acceptance and your loyal cooperation. Distributed over the state as you are, you can do much to make this sort of program a real working one, not one to be forgotten after the proper resolutions have been acted on. The board is seriously handicapped by lack of funds to carry on such work as is contemplated by the resolutions presented, but a conference with Governor Gunter encourages us to believe that this need can be met in part by some special provisions which were made for war work by the special session of the legislature. With the best that we can hope from this source we must count on your most active and loyal cooperation in the accomplishment of anything worth while toward the solution of this stupendous problem.

MAKING SURGERY SAFE FOR DEMOCRACY.*

CHARLES S. ELDER, M.D., DENVER.

The title of this essay was not chosen because of its resemblance to a current and popular phrase; but because it expresses, quite exactly, the problem about to be discussed. The question which this paper asks and attempts to answer is this: How may the practice of surgery be restricted, in any considerable community, to those qualified to judge of its fitness in any case and to carry out its processes, without, at the same time, instituting any measure incompatible with the spirit of our social institutions or with our social aspirations; without, in other words, imposing new and unnecessary restraints upon individual liberty? Several plans for correcting surgical abuses, or rather several modifications of the same plan, have been proposed, but no one has undertaken the problem who seems to have set clearly in his own view what he conceives to be the limits of the power which

society may justly exercise over the individual.

Any American audience will probably agree with the statement that in this country surgery has reached its most sublime height and its most profound degradation. Either extreme is attributable to freedom of individual action. The door has been open to every one without distinction as to talent or training. The entrants have brought with them both the glory and the shame of our profession.

The evils of American surgery are not newly discovered. They are old enough to have grown to great height. They have been so frequently enumerated and denounced that it is not now necessary to seek invectives appropriate to them. Arthur Dean Bevan,¹ President elect of the American Medical Association, asks: "What shall be done by the medical profession about the unnecessary and unwarranted surgical operations done as a result of ignorance in unattached and uncontrolled hospitals by poorly trained men? What shall be done about the unnecessary operations done by dishonest men for a fee; the unnecessary appendix operations done for imaginary appendicitis; the unnecessary fixations of the kidney; the unnecessary amputations of the breast done for benign or imaginary breast tumors; the unnecessary operations on the female genitals, on the tonsils, on the gall-bladder, etc.? What shall be done about the operations that are due to a lack of good judgment or to misguided enthusiasm; the unnecessary operations on fractures; the fantastic operations for intestinal stasis without gross pathology; operations for supposed insufficiency of the ileocecal valve based on misinterpreted Roentgen evidence, intestinal anastomoses or resections of the large intestine for the cure of epilepsy?"

It requires no clairvoyant vision to foresee that active steps will soon be taken to relieve our surgery of its opprobrium and it is particularly necessary that the attempt to suppress the vicious and the ignorant shall not also smother aspiring talent. The opportunity for the commission of these of-

*Read before the Medical Society of the City and County of Denver, December 18, 1917.

¹Bevan, Arthur Dean: The Journal A. M. A., 1917, lxix, 161.

fences against learning and morals is furnished by what Dr. Bevan calls the "unattached, uncontrolled hospital". Dr. Wetherill² thinks so too and he urges that all open hospitals be converted into closed ones. He asks for "a general medical board of control for all hospitals in every community, with full authority to say who may and who may not operate in such hospitals."

Let us assume that such a board, if it were created, would act with impartial wisdom in making its selections. It could not do so unless it were guided by certain criteria. So far as the rising generation of surgeons is concerned, we are left in no doubt, by any of the speculators in surgical sociology, as to what these criteria should be. Aside from being a graduate in medicine a surgeon should have been an interne, for a specified period, in a hospital and should have attended an active surgeon for a designated time, as his assistant.

Here difficulties begin to arise. It would be necessary before such standards could be maintained to ascertain what a hospital is. Certainly not every institution bearing the name can be accepted as a training post for surgeons. The nature and extent of the opportunities which a hospital should offer its internes would require definition. An assistantship to a surgeon is surrounded by similar ambiguity. It is required to know what a surgeon is and here perplexities begin to mount and multiply. It is no unjust detracting to affirm of surgeons what is true of the men in any profession: that those of sound learning and high character are of the few. It is assumed, of course, that those preparing for a surgical career are to be instructed in firm principle, trained in accurate art and led by lofty example. Failure in any one of these particulars would but propagate the very evils which it was designed to suppress.

Places where opportunities are ideal and assistantships with occupied and able men would probably be too few to supply the demand for them. The rapid progress of surgery must not be fettered by any limitation to the output of surgeons. The survival

of the fittest is not determined by casting one seed upon the ground. There must be many of them wafted to fate; more indeed than can find root-room in the soil.

These difficulties, it may be contended, are merely suppositions and such as arise in the mind of one who becomes timid when confronted by great enterprise. The determination whether or not they are of serious character must wait upon the existing fact; but there is yet another objection arising out of the nature of the plan itself, applicable, also, to any other plan for the regulation of surgery as yet proposed: it establishes a Mason and Dixon line on one side of which all are free, on the other all must submit to certain limitations in their therapeutic activities. Vexatious and, indeed, intolerable as such restrictions would be to many, they would be justifiable if they were necessary for the accomplishment of the purpose in view. The question is one of morals and the ultimate appeal in all moral questions is utility—not personal and temporary, but general and permanent utility; but the utility of any measure is but relative. A plan must be weighed against its purpose and compared with any other means tending toward the same end. To insist upon one course when others are open and to make the pursuit of such a course a ground for preferment strikes at the root of all that is lovely in social affairs. It fetters development by compelling all concerned to fashion themselves according to the will and the model of others.

Are there, then, other ways than that proposed of arriving at a wide and practical knowledge of surgery? Clinical surgery consists of three things, seeing, feeling and doing. Can the facts revealed to sight and touch and the processes indicated by doing be communicated in any other way than by personal access to the thing and participation in the work?

In 1898 a book appeared which, because of the richness, beauty and lucidity of its illustrations, marked a mile-post in the progress of American surgery. It was Kelly's *Operative Gynecology*. It is quite certain that with the appearance of this work gynecological operations became, in a measure,

²Wetherill, H. G.: *Surgery, Gynecology and Obstetrics*, 1915, xx, 705.

standardized, more commonly undertaken and more successfully carried out. Since then many books and articles so illustrated have appeared but this does not mark the limit of the progress made in the visual presentation of clinical surgery. There have been added the stereoscope and, to an increasing degree, the cinematograph, or moving-picture, and one may look forward confidently to the advent of the autochrome or colored photograph. As the matter stands, all the eye can see, except color, is before anyone in every remote region penetrated by those ubiquitous characters, the book-agent and the mail carrier.

So much success in representing the perceptions of touch has not been attained. These are aroused in the mind by analogy or by making appeal to anterior knowledge, as when we say that a thing is hard or soft, that the neck of the womb is of the consistency of the end of the nose but when softened by pregnancy its density resembles the inside of the cheek. These similitudes are not accurate and convey impressions less lively than actual palpation but they help to form, nevertheless, concepts of practical importance.

In the representation of acts illustrations are probably of more importance than viewing the acts themselves because the picture shows accurately certain fundamental positions which are easily coordinated by imagination. Who can affirm, then, that internships and assistantships are essential to surgical competence? Who would insist upon them if they are unessential? How are we to restrict surgery to those who have pursued such a course if it is not insisted upon? If such restriction is either unjust or imprudent is there still a way of limiting surgery to surgeons? Can surgery be made safe in a democracy?

We are familiar with certain nerve activities and secretions in the animal body which have pressor or depressor effects. In the social body, too, there are forces which tend toward stability or which induce change. These forces are common opinion and individual initiative. Opinion, often appearing in customs, sometimes expressed in laws, is the conservative always frowning

upon innovation and personal independence. Individualism is the radical, the anarchist, ready to break forth at any time in flaming rebellion. The social organism is in a healthy state when these two forces are at equilibrium. At different times and places one sees the effects of the rise and fall of each of these contending influences. In new communities the eyes bulge with new prospects; the pulse runs high; the hands tremble in anxious haste. Individualism is in excess. In old states, like China, a lethargy falls upon the people; acts are of a routine and necessary kind such as are respiration and digestion to the body. Opinion or custom is supreme.

Now what we complain of is an abuse of personal liberty. Evidently, then, the proper remedy is the creation and promulgation of opinion opposing such abuse. There are circumstances in which neither law nor physical resistance is proper and yet opinion is an effectual deterrent. Which of you would walk down Sixteenth Street attired in the raiment of a Chinese mandarin? None perhaps; but why not? There is no law against it. No harm can come of it. The garments are far more beautiful than our own sombre apparel. Opinion is against it. "People would think strangely of it", we say. The law imposing punishment on those who do unnecessary and mutilating operations is ample in its letter and spirit but its power and penalties seem to fall more commonly upon the just than upon the unjust. When the law is injurious in its exercise or is impotent to restrain miscreants opinion should be organized to act in its stead.

Let us see, then, how this may be done. Through the agency of this society or the staffs of the various hospitals committees of men, just and informed, should be named to attend operations. The presence of such a committee would be a stimulus to a surgeon who is sure of his moral and scientific ground, but to one who undertakes work for which he is unqualified or which he could not justify such a body would seem an intrusive, inauspicious apparition. But more could be done than to watch in silence. Some record of the impressions received

should be left behind. We already have the operating room report giving such details as the name of the operator, the anesthetic used, the operation done, time consumed, etc. To these might be added the diagnosis, pre-operative and postoperative; the apparent need of operation, showing whether the work was done to correct some evident lesion or for some pathologic phantom such as chronic appendicitis or intestinal stasis. Certain qualifications exhibited by the operator might be graded by a, b and c, such as technical skill and judgment.

The evidence is now accumulating upon which opinion may rest. It is not unlikely that, after a time, hospital authorities may become so burdened with what lawyers call "guilty knowledge" that they will ask certain men to take their work elsewhere if any other place is open to them. But it is the principle alone which is brought to attention. The principle of keeping our hospitals open to all licentiates in medicine, watching, meanwhile, the performances of those who avail themselves of hospital facilities and keeping a just record of the judgment, talent and virtue which their work exhibits.

The suggestions made are not so much applications as specimens of applications.

It should be said, finally, that the plan would build rather than destroy. It would show each surgeon his frailties and defects that he might mend them. It would incite men to study to avert the shame of open failure and to travel in search of fresh devices. Here would be exhibited, rather than concealed, the result of that study and of that travel, not to the clinics of America alone but, in more propitious times, to every clinic, no matter how remote, where work is done worthy of imitation. The number of those contending for favorable opinion being large, their search for knowledge would be wide. Here among us one might see reproduced the work of every consummate artist; partake of the rich fund of recent learning of every profound scholar, and feel the inspiring example of those men everywhere who stand on tiptoe straining to catch a single ray of the yet unrisen sun.

550 Metropolitan Building.

LYMPHOCYTES AND THEIR RELATION TO RESISTANCE IN TUBERCULOSIS.*

E. D. DOWNING, M. D., and J. L. ALLISON, M. D., WOODMEN.

The remarkable change for better which tuberculous patients often show makes it seem as though the body had accomplished the production of some substance or cell capable of holding the tubercle bacilli in check. To us, this development of a fighting force in the tissues, or on the other hand its entire failure to materialize in the soft tuberculous cases has been of especial interest. It is the object of this paper to bring before you the results of our work in following the lymphocytes in their relation to this problem.

Briefly, the facts known about the lymphoid tissues and their relations to tuberculous lesions are these:

First: Lymphocytes are almost constantly present about the periphery of the typical tubercle. They may be there simply because tissue is being destroyed but from the other facts now known we should suspect that they have some part in attacking the tubercle bacillus. At times the lymphocytes are so numerous about the lesion that it becomes a lymphoid tubercle as distinguished from the large cell tubercle.

Second: Lymphocytes may make up ninety-five per cent or more of the cells in pleural exudates. In such fluids it is very difficult to demonstrate the tubercle bacillus. It would appear in this instance, that the lymphocytes are bactericidal.

Third: Heineke¹ found that the x-ray destroys the lymphoid tissues. Murphy and Ellish², using this fact, have demonstrated that the tissues become fertile soil for the tubercle bacillus after massive doses of the x-ray. Morton³ found that guinea pigs may be made so highly susceptible to the tubercle bacillus by x-rays that definite lesions can be found in ten days. The reason for this increased susceptibility is probably the fall in lymphocytes which occurs.

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

Fourth: Murphy⁴ claims, "When a marked lymphocytosis is induced by first immunizing mice against, and then inoculating them with cancer, the resistance to tuberculous infection is greatly enhanced. This heightened resistance may be set aside and even changed to a state of increased susceptibility to the infection by again depleting the lymphocytes by means of the x-ray."

Webb⁵ and his co-workers have established the fact that the mononuclear cells are increased at high altitudes where tuberculosis is considered infrequent among the natives. Brecke⁶ notes that a decrease of lymphocytes occurs when the disease grows worse and that a decrease seems to indicate an unfavorable prognosis. Wack⁷ reports a relative decrease in lymphocytes in miliary tuberculosis in which no secondary infection was found at autopsy. On the other hand many writers have not been able to offer any conclusions that would show that any one type of blood cell was a factor in tuberculosis. This we believe was because they took large groups of cases rather than individuals and did not compare their counts with the rapid changes that may occur.

During the past two years at the Modern Woodman Sanatorium we have done routine blood counts when patients entered and six to nine months later on their leaving. Others we have counted at short intervals. We classified the cells as polynuclears, transitionals, lymphoid cells, eosinophiles, basophiles and miscellaneous forms. The following charts have been made to show how the lymphocytes fluctuate.

Decreasing Counts (Case 3155)

Date	Polynu- clears %	Lymph- ocytes %	Others %	Condi- tions
4-19-17	58	40	2	Up, 99°
6-30-17	75	24	1	Bed, 100°
7-18-18	75	21	4	Bed, 101°
8-17-17	78	21	1	Bed, 100°

Increasing Counts (Case 2805)

Date	Polynu- clears %	Lymph- ocytes %	Others %	Condi- tions
8-18-16	79	17	4	Bed, 100°
3-31-17	73	21	6	Up, 99°
5-10-17	63	31	6	Up, 98.8°

Fluctuating Counts.

Date	Polynu- clears %	Lymph- ocytes %	Others %	Condi- tions
6-20-16	76	23	1	Bed, 101°
10-23-16	55	43	1	Partly Up, 99°
1- 1-17	74	26	0	Bed, 100°
1 -3-17	83	17	0	Bed, 100°
1-31-17	..	..	.	Died

Nine pneumothorax cases were counted before and after compression:

Lymphocyte Percentages.

Case Number	Before Compression %	After Compression %
2599	30	49
2628	28	40
2662	37	46
2865	19	28
2942	20	30
2964	20	34
2986	8	33
3101	23	32
3074	16	36

Gassing in trench warfare produces a lymphocytosis. We planned to gas guinea pigs and then inoculate them. A pneumococcus epizootic killed off over ninety-five pigs. The only interesting thing observed was, that of fifty pigs which had been inoculated with material from pyorrhea pockets none died in the epizootic. Were they vaccinated?

To summarize briefly: The presence of lymphocytes about the tubercle, their abundance in certain pleural exudates, the interesting points brought out by the x-ray and their fluctuation in the blood with the progress of the disease makes us believe that a lead through the lymphocytes has been found towards the secret of resistance in tuberculosis.

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¹Heineke, H. Quoted from Murphy, J. B., and Ellis, A. W. *Exper. Med.*, 1914, xx, 397.
²Murphy and Ellis. Same.
³Morton, J. J., *J. Exper. Med.*, 1916, xxiv, 419.
⁴Murphy, J. B., and Taylor, H. D., *J. Exper. Med.*, 1917, xxv, 609.
⁵Webb, G. B. Several references in the *Trans. Nat. Tuberculosis Assoc.*
⁶Brecke in Brauer, L., and Schroeder, G., *Handbuch der Tuberkulose*, Leipzig. 1914.
⁷Wack, P. *Deutsch. Arch f. klin Med.*, 1914, cxv, 596.

DISCUSSION.

G. B. Gilbert, Colorado Springs: This paper brings up a subject which has been of consider-

able interest to many workers in tuberculosis for some years. As long ago as 1908 Bartel suggested that the lymphocytes might have a defensive role in tuberculosis; at the same time, Craig and Ullom suggested that the percentage of lymphocytes might act as a help in giving a prognosis in all tuberculous cases. Since then many workers in Colorado and elsewhere have shown definitely that the actual number of lymphocytes does increase as the patient improves and does decrease as he does badly.

In any discussion of this subject we should not forget to mention the work of Marie and Fiesinger, who have shown that the lymphocytes contain a lipolytic ferment which is able to digest the waxy coat of the tubercle bacillus. The x-ray work of Morton on guinea pigs for the purpose of decreasing the number of lymphocytes is a practical result of this series of observations. It is interesting to know that it has been confirmed in London by McGrath, whose report is given in the London Lancet for June. In using this test it is important to inject the material into the peritoneal cavity, after it has been first treated by the antiformin method to prevent the pigs from dying of secondary infection.

The charts of Dr. Downing are most interesting. His results showing that after pneumothorax there is an increase of lymphocytes are startling. I have known some x-ray workers to be very much worried by the trend of these investigations showing the x-ray will decrease the lymphocytes. However, it seems to me, it is a matter of dosage, because a large dose produces merely a transitory decrease of the lymphocytes. When we give an injection of the material subcutaneously the infection develops even more slowly than in the control animal. This is probably due to the fact that following the decrease in lymphocytes, within a few days we have an increased proliferation and possibly increased resistance. So it may be possible to use the x-ray by proper dosage, to increase the lymphocytes, which should have a beneficial effect in tuberculosis.

It is certainly very trying to have a complete series of experimental animals decimated by an epidemic. However, this is very common. The remarks about gas poisoning producing lymphocytosis are interesting. On the whole, I think from all accounts, most of us would prefer to have our lymphocytes remain low to being gassed at home after the method now in use in the European trenches.

News Notes

Dr. Carroll E. Edson of Denver has been appointed chairman of a committee of physicians of the department of publicity and information of the State Council of Defense to aid in the dissemination of patriotic information.

Dr. Oliver Lyons of Denver, another member of hospital unit number twenty-nine, has been ordered to report for duty at Camp Logan, Houston, Texas.

The state society has sustained another loss from its ranks by the death of Dr. George F. Roehrig, Denver, which occurred February 17 following several years' ill health.

Dr. T. A. Stoddard of Pueblo has received a commission as captain in the M. O. R. C.

Miss Kathleen Mitchell, daughter of Dr. W. C. Mitchell of Denver, has enlisted for service in the American Expeditionary Forces in France as telephone operator and is to be one of a unit of one

hundred that will receive training at Trenton, N. J., before going over.

Dr. Lawrence K. Lunt, who became a lieutenant in the M. O. R. C. last summer, has recently been made a captain in Ambulance Company number three hundred and sixty-two at Camp Lewis, Washington.

Dr. J. C. McGillivray, for many years police surgeon for the City of Denver, died on February 11 at his home in Denver.

There were two hundred thirty-three deaths from cancer of various parts of the body in the year 1917 in Denver; and six hundred forty-seven from tuberculosis, all forms. The total of deaths was three thousand two hundred thirty-six.

The cancer death rate in Ireland for 1916 was 0.91 per 1,000 of population. Denver's 1917 rate was about the same. Switzerland is said to have the highest death rate from this cause in the world, but the only one which is diminishing.

In a preliminary announcement from the U. S. Bureau of the Census relating to mortality statistics for 1916, it is stated that because of progress in the prevention and treatment of tuberculosis of all forms, the decline in the tuberculosis death rate in recent years has been most pronounced, having fallen from 200.7 per 100,000 in 1904 to 141.6 in 1916, a decrease of nearly 30 per cent.

The same announcement shows that approximately two-thirds of all deaths in 1916 (in registration districts, of course) were due to the following twelve causes, of importance in the order given: heart disease, tuberculosis, pneumonia, Bright's disease and nephritis, cancer and other malignant tumors, apoplexy, diarrhea and enteritis, influenza, arterial diseases, diabetes, diphtheria and croup, typhoid fever. The first three caused one-third of all deaths.

The City and County of Denver statistics for 1917 very nearly correspond with the above in the order of importance, with the notable difference that tuberculosis is away and ahead the first, being responsible for twenty per cent of all deaths, the pulmonary form alone representing seventeen and a half per cent. The pneumonias come second and heart diseases third in Denver.

Dr. L. G. Crosby of Denver, member of hospital unit number twenty-nine, has been called to New York for special instruction.

The February news note in which the editor referred to Dr. F. B. Stephenson, associate editor of Colorado Medicine, as having resumed practice in Denver ended with a comma. Our friends the printers had dropped a final line o' type which contained the words "limiting to roentgenology."

Dr. L. G. Brown of Colorado Springs has been given a commission as lieutenant in the M. O. R. C., and is awaiting a call for duty.

Dr. Frank Finney of La Junta has spent several weeks in the Minnequa hospital at Pueblo, under treatment for rheumatism.

Dr. Guy A. Ashbaugh has left Central City to establish offices at Merino with Dr. W. B. Lutes.

Lieutenant Walter K. Reed of the M. O. R. C., son of Dr. W. W. Reed of Boulder, recently spent a few days with his parents before leaving for Fort Sam Houston.

The Denver chapter of the Red Cross Civilian Relief Committee has recently announced a medical, surgical and dental staff consisting of sixty-five doctors and eleven dentists. All the special branches of medicine and surgery are fully represented.

In a February news note regarding the appointment of a Denver county physician, it was erroneously stated that he was to succeed Dr. G. P.

Lingenfelter. Dr. Lingenfelter is Chief Medical Inspector for the City and County of Denver and has not resigned from that position.

Captain T. A. Stoddard of Pueblo was ordered to report March 1 for duty at Fort Riley.

Dr. W. P. Harlow of Boulder was in Chicago in the latter part of February and from there made a trip to Arizona.

According to an item in a Steamboat Springs paper, Dr. Emma W. Gillmore of that place has been appointed acting assistant surgeon in the army medical service and assigned to duty at Chattanooga, Tennessee.

Dr. C. T. Burnett of Boulder, for eight years professor of bacteriology in the University of Colorado, has been appointed a member of the Commission for the Prevention of Tuberculosis in France. He expected to sail early in March and upon his arrival in France will have charge of the erection of certain clinical laboratories as well as doing the clinical work which falls under his specialty. This commission is a department of the Rockefeller Foundation, with Dr. Livingston Farrand at its head.

Denver's base hospital unit number twenty-nine was said to have been ordered to mobilize early in March and to report at Camp Cody, New Mexico.

At the request of a number of Denver people interested in social work, the University of Colorado is offering a course on "What Social Workers Should Know About Their Community". The course will involve a study of various phases of city life in Denver, including the following: history of the city; city administration and finance; housing; public health; business and industry; recreation and amusements; child welfare; delinquency; and charities. It will consist of lectures, investigations and round table discussions. The leader of the class will be Professor Loran D. Osborn of the University of Colorado. There will be twelve meetings, held weekly on Wednesday afternoons at 4:00 o'clock. They will be held at the Medical Building of the State University, corner of 13th and Welton streets, unless the class should prefer, later on, to change the place. The first meeting was held Wednesday afternoon, February 20th.

During February the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion with new and nonofficial remedies: The Abbott Laboratories—Chlorcosane, Barbitol-Abbott, Procaine-Abbott; Dermatological Research Laboratories, Philadelphia Polyclinic—Arsenobenzol (Dermatological Research Laboratories) 1 gm. ampoules; Eli Lilly and Company—Typhoid vaccine, prophylactic, Typhoid vaccine, therapeutic, Typhoid mixed vaccine (Lilly); Merck and Company—Mercury benzoate (Merck); Monsanto Chemical Works—Halazone (Monsanto); H. K. Mulford Company—Bulgarian bacillus, friable tablets.

Medical Societies

CITY AND COUNTY OF DENVER.

The regular meeting of the Medical Society of the City and County of Denver was held the evening of February 5, 1918. President Moleen was in the chair.

The president announced the appointment of Dr. Mary Reed Stratton as reporter, Dr. C. F. Hegner having signified his desire to be relieved of this work.

Drs. G. H. Cattermole, H. S. Cooper, E. H. Elliott, Alice Guthrie and Augusta M. Rothwell were elected to membership in the society.

In the matter of the expense of the case of Wright vs. Koch, which had been referred to the trustees, Dr. Melville Black read a report, a part of which follows: "The board of trustees feel that the society as such should not contribute to the payment of this indebtedness. They, however, feel as individuals that they would like to contribute and have therefore headed this list with what they are willing to give to what seems a meritorious cause. They would recommend that a committee of three be appointed to canvass the members of the society for subscriptions." The report was accepted, and Drs. Melville Black, J. M. Perkins and T. E. Boyd were appointed by the chair to fill the purposes of the recommendation.

Dr. J. J. Waring gave an interesting report of "An Unusual Case of Empyema". The empyema followed pneumonia, complicated by a seventh-month miscarriage. The patient had a continuous fever with a muco-purulent expectoration which was better in twenty-four hours after drainage. One special feature was that the fluid in the chest assumed a horizontal level. He mentioned the difficulty in finding the pockets of pus, even with the help of the x-ray.

Dr. S. B. Childs, who had made the x-ray plate, opened the discussion. He showed slides indicating that fluid in the pleural cavity could change its position with the change of position of the patient without the presence of air.

Dr. Leonard Freeman then related an experience of his. The case was one of abscess of the lung in which a number of x-ray pictures and repeated operations were necessary before the pus was located.

The next paper was read by Dr. Leonard Freeman. It was really a case report on a "Method of Controlling Hemorrhage in Resecting a Portion of the Liver". He emphasized the difficulties of diagnosis and of control of hemorrhage. His method of control is to use strips of fascia lata, of which there is always an abundant supply.

Mr. Mark A. Skinner, U. S. Collector of Internal Revenue, spoke on "The Federal Income Tax as It Relates to Physicians". The large attendance of members showed the interest and wish for information about the income tax. The society expressed to Mr. Skinner their appreciation of his interesting address by a rising vote of thanks.

MARY R. STRATTON,
Reporter.

The regular meeting of the Medical Society of the City and County of Denver was held February 19, 1918, with President Moleen in the chair.

Dr. F. C. Buchtel exhibited a fresh specimen of goiter taken from a young man eighteen years of age who had been afflicted with exophthalmic goiter for three years. This case was unusual because of age and sex. He spoke of the treatment and called attention to the fact that it is a nice point to decide the proper time for operation.

Dr. Freeman discussed the use of boiling water in goiter.

Dr. W. W. Grant said that during the examination of army recruits exophthalmic goiter was found to exist much more frequently among young men than had been supposed.

The following were elected to membership in the society: Drs. Clinton Enos, Dugall Macdougall King, Charles M. Spicer and Frank E. Keep.

Two cases of lupus erythematosus were presented by Dr. W. H. Davis. He said he was using intravenous injection of prophylactic typhoid vaccine to clear such cases. In three hours after the injection there occurs a severe reaction with high temperature, lasting five or six hours. The patch clears with the cessation of the fever. He attributes the action on the patch to the hyperpyrexia.

Dr. W. H. Sharpley read a paper upon the new city ordinance, which had been passed Monday, February 18. The ordinance requires reporting and registering of venereal diseases. The purpose is to enforce proper treatment and to protect others by quarantine and isolation, if it is judged necessary. He spoke of the government requiring cities to take measures to protect our soldiers. Some western cities had been required to clear out all prostitutes before the soldiers were permitted to enter the cities. He stated that the only remedies to prevent venereal diseases were a campaign of education and the enforcement of laws to prevent prostitution, since segregation with examination is a failure.

Dr. W. W. Grant stated that this was the first time this subject had received intensive treatment. He spoke of the necessity of the protection of the soldiers to prevent the degeneracy resulting from the return of soldiers infected with syphilis. "These campaigns", he said, "are due to the civilian physicians rather than the army surgeons". The discussion was entered into by a number of others.

An excellent and carefully prepared paper was then read by Dr. O. S. Fowler upon "Preparation, Technic and Post-operative Care in Prostatectomy". He first spoke of the necessary examination and preparation to insure a safe operation. His method is a two-stage operation. He puts in high drainage under local anesthesia as his first stage. He waits for the enucleation or second stage till the patient is in the proper condition. The resection is done under local anesthesia with one or two hyoscyamin, morphin and cactin tablets given before the time of operation. He always gives opiates till the patient is drowsy. Following the operation he gives special attention to the after care of the patient.

Dr. W. M. Spitzer discussed the different points in the operation of resection.

Dr. Leonard Freeman said that in some cases he preferred gas-oxygen anesthesia.

MARY R. STRATTON,
Reporter.

LAKE COUNTY.

The Lake County Medical Society met in regular session in the offices of Dr. E. A. Whitmore on February 14. The following officers were elected for 1918: president, J. A. Jeannotte; vice president, H. A. Calkins; secretary and treasurer, J. C. Strong; state delegate, B. F. Griffith; alternate, R. J. McDonald. A committee consisting of city and county health officers was appointed to care for the returned tuberculous soldiers. Dr. A. J. McDonald read a very interesting paper upon "Sporadic Meningitis in Children". The paper was discussed quite extensively by Drs. J. A. Jeannotte and B. F. Griffith. Dr. H. A. Calkins reported a case that had recently been under his care. Dr. E. A. Whitmore presented a boy fifteen years of age, with a persistent herpes zoster. The case is now well on to recovery. Dr. R. J. McDonald discussed the case and reported two similar cases under treatment recently.

J. C. STRONG, Secretary.

NORTHEAST COLORADO.

At the annual meeting of the Northeast Colorado Medical Society held in Sterling, January 20, 1918, the following officers were elected: Dr. M. L. Babcock, president; Dr. J. C. Latta, first vice president; Dr. N. Eugenia Barney, secretary-treasurer; Drs. J. H. Bush, J. H. Daniel and M. R. Lox, censors; Dr. J. C. Chipman, delegate to the State Society meeting; Dr. William Greig, first alternate; Dr. M. R. Lox, second alternate.

Dr. Hummel, who recently came to Sterling from Iowa, was admitted as a member.

Dr. Edward Jackson of Denver, President of the Colorado State Medical Society, was with us as an invited guest and was the principal speaker of the evening. Besides the address by Dr. Jackson, readings and music made up the entertainment for the evening. In place of the usual scientific program, the Epworth League of the M. E. church served a banquet to the physicians, druggists, dentists, their families and invited guests. This has been an annual affair for several years at the first meeting of the year.

At the February meeting of the Northeast Colorado Medical Society, no scientific program was had, all the members who were on the program being absent.

J. H. BUSH,
Reporter.

A Volunteer Medical Service Corps.—For the purpose of completing the mobilization of the entire medical and surgical resources of the country, the Council of National Defense has authorized and directed the organization of a "Volunteer Medical Service Corps", which is aimed to enlist in the general war-winning program all reputable physicians and surgeons who are not eligible to membership in the Medical Officers' Reserve Corps. It is intended that this new Corps shall be an instrument able directly to meet such civil and military needs as are not already provided for.

It is proposed that the services rendered by the Volunteer Medical Service Corps shall be in response to a request from the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service, or other duly authorized departments or associations, the general administration of the Corps to be vested in a Central Governing Board, which is to be a committee of the General Medical Board of the Council of National Defense. The State Committee of the Medical Section of the Council of National Defense constitutes the Governing Board in each State.

It is proposed that physicians intending to join shall apply by letter to the Secretary of the Central Governing Board, who will send the applicant a printed form, the filling out of which will permit ready classification according to training and experience. The name and data of applicants will be submitted to an Executive Committee of the State Governing Board, and the final acceptance to membership will be by the national governing body. An appropriate button or badge is to be adopted as official insignia.

The Health Insurance Movement.—The medical profession of Great Britain, as a result of five years' experience under the law, has now expressed its approval of universal health insurance. A comprehensive inquiry has been conducted by a committee of the British Medical Association among all local branches and

panel committees. Its report on the favorable attitude of the doctors, published recently in the *British Medical Journal*, says: "The degree of unanimity so far disclosed is somewhat remarkable." This indicates a significant change of view on the part of the medical profession as a whole, the Association finds, since at the outset health insurance "was the most highly controversial subject that has ever been before the profession." The investigation, according to the committee, has shown that the Act is today regarded as a distinct gain to the profession as well as to the public health.

In this country, the official legislative commission of New Jersey has recently reported unanimously in favor of health insurance legislation, saying: "The stress of industry in war is making increasing demands upon physical endurance. In our hour of necessity we have been shocked by the high percentage of draft rejections on account of physical disability. As never before we need now to conserve, for present and future generations, the health and physical vigor of our people."

A health insurance bill has just been introduced in the New York Legislature, immediate passage of which is urged by the State Federation of Labor as a need accentuated by the war. This measure conforms generally to the plan presented last year, as prepared by the American Association for Labor Legislation in cooperation with the American Medical Association. The four specific demands of the American Medical Association that health insurance legislation "shall provide for freedom of choice of physician by the insured, payment of the physician in proportion to the amount of work done, the separation of the functions of medical official supervision from the function of daily care of the sick, and adequate representation of the medical profession on the appropriate administrative bodies," are all covered in the New York bill.

A Military Anti-Tuberculosis Program. Plans for a complete program for the prevention of tuberculosis in the army have been perfected by the National Association for the Study and Prevention of Tuberculosis working in cooperation with the Surgeon General, the Y. M. C. A., and other agencies. This, it is predicted, will put the impending second draft on a better health basis than the first. The program will include not only a follow-up for every man discharged on account of tuberculosis, but a thorough-going health educational campaign among the soldiers.

Inasmuch as the enlisted or drafted men do not become accepted soldiers until after their probationary period lasting from three to six months in the various services, the Government assumes no responsibility for the after-care of those whose health breaks down during that period. Hence, this problem belongs to the civilian boards of health and the unofficial health organizations.

The National Association program falls into two main divisions: (a) follow-up work and (b) educational work. The first obstacle to the follow-up program was section eleven of the Selective Service Regulations regarding the second draft which forbids giving a record of a man's condition to anyone except certain designated officials. The

National Association officers, however, placed before the War Department the importance of this work and were influential in persuading them to open the records of rejected men to state and local Boards of Health throughout the country, through the United States Public Health Service and the Council of National Defense.

Inasmuch as the above section of the regulations does not apply to men dismissed from training camps after they have passed draft boards, the Association arranged with the Surgeon General and the division surgeons in camps to receive the names of all men thus dismissed. These lists are divided up by states and forwarded to state associations and state boards of health for follow-up work. Where men are referred to localities where there are not at present facilities for this follow-up work, the Association will use its good offices to promote the establishing of such facilities.

In the meantime, the Medical Department of the Army has perfected its machinery for weeding out these tuberculosis cases. Every man passed by the draft board after going into camp is examined by the regimental surgeon, re-examined by a tuberculosis board and then if suspected of tuberculosis, again examined by a tuberculosis expert. This follows a general policy mapped out and recommended by the National Association.

The Association is also cooperating with the Surgeon General's office to aid the Government in providing sanatoria for those men who have been discharged from the service on account of tuberculosis after their probationary period has expired. All full-fledged soldiers and sailors returned from France or other stations will be cared for as near to their own homes as possible in sanatorium accommodations provided by the Government. The Government intends to utilize as far as possible existing institutions.

From the United States Marine Corps the National Association has secured each month a report of men rejected for tuberculosis from all its recruiting stations, and these men will receive the regular follow-up attention.

From the second or educational division of the program it is hoped to derive the greater ultimate good by the establishment of fundamental preventive measures among the well.

In cooperation with the Educational Committee of the National War Work Council of the Y. M. C. A., the National Association will furnish a number of stock lectures dealing with tuberculosis, together with lantern slides to illustrate them. It will also arrange to put the educational secretaries of each of the camps in touch with public lecturers in and around their respective camps. The Association has requested the War Department to give careful consideration to the desirability of appointing one or more special officers detailed to lecture on tuberculosis and allied health subjects in all of the army camps throughout the country.

The Association has prepared a special circular entitled, "Red Blood," giving in brief and attractive form a message to the soldier relative to personal fitness, and a health "Don't" card; and a Public Health Manual may also be distributed, the latter being a text-book of personal hygiene.

The Association will also arrange to distribute through the departmental executive of the Y. M. C. A. a number of special tuberculosis exhibits known popularly as "The Parcel Post Exhibit". In connection with these moving picture films and lantern slides will be used.

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Editorial Comment

THE VOLUNTEER MEDICAL SERVICE CORPS.

In different countries, as the war went on, the tendency has been not to insist on certain requirements with regard to fitness for military service that were strictly enforced at the beginning. Requirements regarding height and relative weight have been altered. The wearing of glasses has been more widely tolerated. Only with reference to certain diseases contagious and capable of disabling their victims, such as trachoma or tuberculosis, are the lines drawn more and more strictly.

This is quite in harmony with the idea of universal war service. The struggle for national existence—for civilization against scientific barbarism—cannot be carried on by a specially selected class who approach physical perfection and are within the period of greatest physical strength and activity. The reliance for victory cannot be placed wholly on the class in which prize fighters and college athletes belong. It begins to be understood that every person in the community can, in some way, assist to carry our social organization through this crisis.

The democratic ideal is not a body of picked men who shall preserve the state, and therefore command it; but a union of all the people in the service of universal ideals. Each gives what he can, and so wins his right to a voice in determining the control of the whole. To harmonize freedom with efficiency is a tremendous task. But it is being accomplished through the working out and application of new ideas in many direc-

tions; and one of the greatest of these ideas is the broadening of the basis of recognized war service.

“A wise physician, skill’d our wounds to heal,

Is more than armies to the public weal” runs Pope’s translation of Homer’s Iliad. The military system of autocracy long ago recognized the necessity of medical service. But the recognition was that of a necessity which was to be strictly subordinated to the general plans for the fighters. The physical and age requirements were kept in close conformity to those of the man whose whole duty was to endure the utmost physical hardship. The fitness of the doctor acquired by long years of study, broad experience and ripened judgment was absolutely ignored, as compared with his ability to carry a gun, endure exposure, or recover from almost mortal wounds. But in this matter, too, tradition is giving place to wisdom.

The few doctors who had entered the Medical Officers’ Reserve Corps years ago, and were quite beyond the age for admission when war broke out—some even past the age for retirement—were found capable of extremely valuable service in the emergency of sudden expansion of our military establishment. Most important work in organization, and for the detection and exclusion of tuberculosis among recruits, has been done by doctors who came to Colorado for tuberculosis, and would still have to be excluded from full military service. Striking services of this kind have been furnished by members of the Colorado State Medical Society. Probably the widest and most important utilization of them is now going on through the Medical Advisory Boards.

A plan to render this kind of service more general, systematic and directly available, and to give it deserved recognition and standing, has now been worked out under the authority of the Council of National Defense. A "Volunteer Medical Service Corps" is to be formed by enlistment of reputable physicians and surgeons who are not eligible to membership in the Medical Officers' Reserve Corps, because of its requirements as to age and physical soundness. The idea started in Philadelphia, where a society of nearly three hundred members was formed under the presidency of the veteran surgeon, Dr. W. W. Keen, who first won professional distinction by brilliant reports of his experiences in the American Civil War.

This organization is being formed under the Executive Committee of the General Medical Board of the Council of National Defense, composed of Dr. Franklin Martin, Chairman; Dr. F. F. Simpson, Vice Chairman; Dr. Wm. F. Snow, Secretary; the Surgeons-General of the U. S. Army, Navy and Public Health Service, and Drs. Cary T. Grayson, Charles H. Mayo, Victor C. Vaughan and William H. Welch. The general administration of the Corps will be vested in a Central Governing Board, and the State Committee of the Medical Section of the Council of National Defense constitutes the governing board in each state. An appropriate button or badge is to be adopted as the official insignia.

The new organization will bring no comfort to slackers, since those who are eligible to the Medical Officers' Reserve Corps will not be eligible to the Volunteer Medical Service Corps, and those who believe themselves properly excused from military service for other than age or physical reasons, will have their reasons for such belief closely and impartially scrutinized. Neither will it open an avenue to respectability for the half-trained or quackish aspirant for official recognition. A few of these have wormed their way into military position and a uniform, by political backing and through state appointments; but a corps organized through the State Committees of National Defense, and administered by the Executive Committee mentioned above, offers little opportu-

ity to the men who have been refused admission to the Medical Officers' Reserve Corps, because of their ignorance of modern medicine and surgery.

The work of the Volunteer Medical Service Corps will doubtless include some things belonging to the military and naval services, the examination of recruits, the classification of men coming under the provisions of the draft, and the care of convalescents and men in the hospitals or camps for recuperation and reeducation. It may include more of the work that falls to the Public Health Service, in connection with epidemics and emergencies that arise in civil life. But it will also have to do with carrying on under the stress of war conditions certain work essential to the normal life of the community. The maintenance of efficiency in hospitals, health departments and medical schools, the medical care of those dependent on soldiers, the performance of operations needed to render recruits fully fit for service, may all be classed among its duties.

The new corps belongs to a new movement in public service. It will not inherit the traditions, or the honors, that belong to the Medical Corps of the Army or the Navy. Its members belong in the new class that has sprung into existence during the present war and especially in this country; the class which furnishes the working mass of Committees of National Defense, whose admission to public usefulness has been on the single basis of preeminent ability to do something that greatly needs to be done. This class is typified by Hoover, Garfield, Coffin and Hurley, among business men who have got into the limelight of newspaper publicity. But no less worthy of recognition in it are the thousands of "civilian consultants" and members of the "Medical Advisory Boards" throughout the country, who are giving their time and their best energy, without compensation, to the sifting out of the effective armies that are to fight the battle of the new freedom against the forces of barbarism and brutality.

E. J.

It is stated that base hospital number twenty-nine, of Denver, has at last been ordered to assemble for service and that this unit will be sent immediately across the Atlantic without any preliminary training in the United States.

THE ANTIVENEREAL ORDINANCE.

The patient's privilege of confiding in his physician with the assurance of a complete measure of secrecy has long been established in a number of states by definite legal provisions with regard to "privileged communications". Such laws commonly provide that the physician may not testify, and that neither the doctor nor the patient may be compelled to testify as to statements by the patient which were made to the physician in his professional capacity and which were necessary for a correct understanding of the medical aspects of the case.

Now comes a widespread movement for the passage of special legislation under which cases of venereal disease are to be subject to report and quarantine, more or less after the method already applied to other infectious diseases. Such laws, or regulations having the effect of laws, bid fair to effect a radical change in the time-honored relation between doctor and patient. The value of the implied pledge of secrecy on the part of the physician is that more accurate diagnosis and treatment are favored by the full and frank statement of all aspects of the patient's condition which the pledge encourages him to give, no matter whether such a statement does or does not involve a disclosure of moral turpitude. The right to secrecy has operated most advantageously in the very class of diseases now under consideration, and if the antivenereal laws are successfully applied, the confidential relation so long ascribed to the physician in literature as well as in daily life will in an important measure have been taken from him.

The various arguments for and against the form of legislation with regard to venereal diseases now being enacted at the request of the United States government in many parts of the United States, and more especially the precise terms of the ordinance lately put into effect in the City of Denver, were ably presented at a recent meeting of the Medical Society of the City and County of Denver especially planned for that purpose. The necessity of loyally supporting the federal government in its attempt to reduce the incidence of venereal disease in the army was

unanimously conceded. It was brought out that the government had quoted in its appeal and indorsed as having its approval an ordinance passed by Des Moines, Iowa, providing that physicians must report every case of syphilis to the mayor and that it is the duty of the mayor to issue an order that the person affected shall be restrained until an order for his release is issued. For some time past the city of Buffalo, N. Y., has had an ordinance to the effect that syphilis and gonorrhea are notifiable diseases, without any provision that the record shall be confidential.

The most effective criticism of the Denver ordinance and of similar measures elsewhere was the contention by Mr. James H. Pershing, the prominent Denver lawyer, to the effect that the law of the State of Colorado with regard to privileged communications had not been repealed, even by implication, by any subsequent legislation, including the various medical and public health laws and regulations; and that therefore a physician who reported cases of venereal disease under the new ordinance would render himself liable to any penalties entailed under the original law. Mr. Pershing also maintained that if the patient refused his consent to notification by the physician, and if the case was subsequently discovered and brought to trial by the city authorities, neither doctor nor patient could be compelled to testify.

Mr. J. A. Marsh, Denver municipal attorney, however, argued that the various state laws providing for the reporting of communicable diseases must be regarded as repealing by implication whatever aspects of the law as to privileged communications might be in conflict with the later statutes. It was also pointed out that chancre and syphilis were already referred to as communicable diseases in the regulations of the Colorado State Board of Health.

It is probable that special legislation dealing with this subject will be passed at a not very distant date by the state legislature. Until that time there seems to be at least an element of doubt as to the exact legal position of the physician. If he does not report his cases of venereal disease as required by the new Denver ordinance or by similar or-

dinances in other parts of the state, he may render himself liable to heavy penalties. If on the other hand he obeys the new ordinances and reports his cases, it is not impossible that he may render himself liable to damages for infringement of the law with regard to privileged communications.

It is to be hoped that when state measures are taken they will be the embodiment of matured plans which will especially take into account the means of enforcement and the impartial applicability of the law; which means that sufficient funds must be appropriated and that medical quacks must be suppressed or kept under surveillance so that easy evasion of the law will be impossible. Under such a law, the good results of publicity may outweigh the lost advantages of secrecy.

F. B. S.

PUBLIC HEALTH IN RUSSIA.

It has been suggested that the happiest nations have no history. No one will dispute that the happiness of most of the nations of Europe would have been far greater without the kind of history which has been in the making for almost four years. Rightly speaking, however, nations at peace are not nations without history in the making: the epigram merely illustrates the false conception of history as related only to political and territorial change.

Since the revolution in Russia, and especially since the collapse and disintegration of an accepted government of all the Russias, we have tended to think of that country more and more purely in terms of chaos. With our ears full of stories of murder and riot, it is easy to forget that even during the after-throes of such a series of revolutions as occurred in Russia last year, or in France a century and a quarter ago, most of the daily affairs of life must still proceed with some semblance of their normal course. Men and women buy and sell, daily meals are prepared, students attend school, farms are tilled, and various forms of community and municipal activity must follow at least a part of their accustomed routine. Such thoughts may be suggested by persusal of a rather detailed paper on public health ad-

ministration in Russia in 1917, recently published in the United States Public Health Reports from the pen of C.-E. A. Winslow, professor of public health of the Yale School of Medicine, and a member of the American Red Cross Mission to Russia.

The public health problems of Russia are, as might be expected, of colossal magnitude. We read for instance that "there are approximately 1,500,000 infant deaths in Russia every year, of which two-thirds should be preventable according to such standards as have been set in New York City". In 1910 the estimated population of European Russian was 118,700,000. The death rate, which averaged 30.8 per thousand, varied by religions from 47.1 among the Orthodox and Mahometans to 22.3 among the Protestants and 21.7 among the Hebrews. Thirty-eight per cent of all deaths were under one year of age, and twenty-one per cent between one and five years. Forty years previously the average death rate was 37.2. The tremendous infant death rate has been attributed chiefly to the agricultural labor of women, particularly among the Great Russians. Yet the infant mortality rate of Petrograd in 1915 was 251 per thousand, and there had been no appreciable decrease in the rate for a quarter of a century. At the present time all infant-welfare work in Russia is seriously impeded by a shortage of milk. There was available last September only about one quart of milk for every thirty people in the total population. Nevertheless some beginnings have been made in dealing with the problem of infant welfare, and Winslow states that the principal station for this purpose in Moscow is the most perfectly equipped plant for the purpose which he has ever seen.

The development of sanitary engineering is in a distinctly backward stage in Russia. In 1912, of 1,063 towns and urban settlements with a population of over ten thousand only 219, or 20.6 per cent, had an organized water supply of any kind, only 167 supplied this water to private houses, and only 69 had filters. There are today not more than a dozen cities in Russia that have modern sewerage systems, and only a half of these have systems of sewage treatment.

Until not many years ago the large rural

population of Russia practically lived and died without medical care, receiving at best the attention of midwives or feldschers, a sort of medical underling of inferior training. Even in 1914, there were in the Russian Empire, excluding Poland and the three provinces of Vilna, Kovno and Kholm, only 18,320 physicians engaged in civil practice, the ratio of physicians to inhabitants being in the cities 1 to 1700 and in the rural districts 1 to 23,000: these were aided by 25,310 medical assistants of various kinds.

Yet Winslow is distinctly optimistic as to the future development of Russian public health, since there has been in recent decades a remarkable development of social medicine along curative lines and a consequent close connection between curative and preventive work. "Russia, on account of the peculiarly acute needs of her rural population, has already developed the state care of the sick to a point of which we are only beginning to dream, and after the war the new republican government will no doubt pursue this social ideal to a much higher point of perfection."

When the zemstvos or rural constituent assemblies were created in 1864, the emancipated serfs and industrial workers were medically almost totally unprovided for. The zemstvos promptly undertook the task of furnishing real medical care to the peasant in the remote rural district as well as to the city dweller. About 1870, there was adopted a system of fixed medical districts each provided with a small hospital and a qualified physician. By 1890 there were 1422 zemstvo medical districts with 1068 hospitals of 26,571 beds, and 414 dispensaries. A large part of rural Russia is now divided into medical districts centering about small hospitals or dispensaries.

There is surely something prophetic about Winslow's remark that the care of the sick is recognized by the zemstvos as a natural duty of society rather than as an act of charity. Medical care under the zemstvos is always without charge, and there is a steady tendency to make all dispensary and hospital treatment free. In most provinces the zemstvo physicians are extending their activities to include preventive medicine. A very liberal plan for the reorganization of

the Central Bureau of Public Health, with a large measure of decentralization, was being favorably considered by the Kerensky government at the time of its fall. Medical inspection of schools is well developed, and in many districts the school physicians are responsible for the care of sick children in their home as well as for diagnosis in the school. A very large proportion of all maternity cases receive hospital care, more than one-half of all the births in the city of Petrograd in 1915 having occurred in hospitals.

THE PROGRAM FOR THE ANNUAL MEETING.

The Committee on Scientific Work of the State Medical Society is now planning the scientific program for the 1918 meeting. Those who contemplate presenting papers at this meeting are strongly urged to communicate with the chairman or another member of the committee as **early as possible**.

Many of the active and honored members of the society whose names have appeared frequently and prominently upon the annual programs are now absent in the service of the country. If, therefore, the success of the coming meeting is to be assured, it is necessary that the program bear many new names. Here is a duty and an opportunity.

The subjects of all papers, not necessarily the exact titles, should be sent in **not later than May the first**. Brief abstracts covering the essential points must be in the hands of the committee on or before June the first, for advance publication in *Colorado Medicine*. By a provision of the by-laws, no paper may occupy more than fifteen minutes in its delivery. Communications may be addressed either to **Dr. J. C. Todd**, Chairman of the Committee, Boulder; to **Dr. A. G. Taylor**, Grand Junction; to **Dr. W. H. Crisp**, Denver; or to **Dr. Crum Epler**, Secretary of the State Society, Pueblo.

The incidence of venereal disease in the United States army for the week ending March 8, per year per 1,000, was: Regular Army, 67.2; National Guard, 59.1; National Army, 146.3; Expeditionary Forces, 44.2. In all the troops (in the United States) there were 2390 new cases in that week.

Original Articles

FINAL CONCLUSIONS REGARDING AMPUTATION OF THE EPIGLOTTIS FOR TUBERCULOSIS*.

LORENZO B. LOCKARD, M.D., F.A.C.S.

At the meeting of the American Academy of Ophthalmology and Oto-Laryngology, in 1909, the author presented for the first time a statistical study of the cases of tuberculosis upon which amputation of the epiglottis had been performed. The following conclusions were then advanced:

"I believe it can justly be claimed that by this operation we save a certain number of lives that otherwise would most certainly be sacrificed; that in a vast majority, when a cure is not to be thought of, we effectually conquer the pain, and that we succeed, even in those in whom the suffering is not entirely controlled owing to the presence of complicating lesions, in diminishing it to a notable degree."

In 1911, a supplementary study was presented to this society, in which his views were summarized as follows:

"These statistics warrant the unequivocal assertion that amputation should be performed in every case of involvement regardless of the extent of the disease, local or constitutional, when odynophagia or dysphagia exists and can be ascribed, even though only in part, to the epiglottis; that it is likewise indicated, and should be performed at the earliest possible moment, in every case where there is anything beyond a sharply circumscribed focus, whether or not odynophagia exists, provided there is even a remote possibility of arrest of the complicating lesions. If the accompanying processes are advanced to a stage where arrest is impossible, amputation should not be performed unless the lesion gives rise to otherwise uncontrollable pain."

In the years that have since elapsed a very large number of operations have been performed, and numerous reports received from operators throughout Europe and

America, hence a report embodying an opinion regarding the real therapeutic status of this mooted procedure may not be without value.

I am further impelled to the making of this report by the circumstance that despite the wide circulation given these and similar papers, there is still a lamentable lack of precise information regarding the real objects of the operation, its indications and limitations.

Particularly is one impressed by the prevalence of the idea that the procedure is a dangerous one, per se, not to be undertaken unless there is reasonable assurance of complete and permanent arrest of the disease, both local and constitutional. This idea is evidently premised upon the additional assumption that unless this object is achieved the final condition of the patient will be greatly aggravated; a theory absolutely untenable.

Amputation of the epiglottis is as safe a procedure as tonsillectomy. In over four hundred cases, in the majority of whom vitality was reduced to the lowest ebb, not a single direct fatality resulted. In five cases considerable bleeding occurred but this was controlled without great difficulty.

Next to this, the objection most frequently advanced is that no operative procedures are justified unless the lesion is so circumscribed as to be capable of complete excision. That this also is usually fallacious has been definitely shown.

When the operation is undertaken with the hope of achieving a cure this desideratum is of considerable importance, but it must be borne in mind that in nine cases out of ten the sole object is palliation, and usually in patients upon whom all other methods of treatment have failed.

Even when a cure is considered possible, removal of all involved tissue is not invariably essential to success. It has been demonstrated repeatedly that when an epiglottis is universally infiltrated, and only the upper half or two thirds is removed, the stump rapidly recedes to normal. It is rare that the disease recurs in the stump. The author has shown by microscopical studies in a number of cases that after partial re-

*Read by title before the American Laryngological Association, Atlantic City, May 28, 1917.

removal of an epiglottitis, even when all other parts of the larynx were diseased, no evidences of tuberculosis were present in the stump two months after operation.

Healing of the stump is usually rapid and complete regardless of the extent or rapidity of progress in the complicating pulmonary and laryngeal lesions, hence the question of advisability of operating in this manner hinges upon two questions; in incurable cases, what amount of relief may be anticipated and, in cases otherwise hopeful, what influence will the operation have upon the accompanying laryngeal lesions?

The effect upon the pulmonary disease is, of course, only indirect and concerns the ability or inability to take sufficient nourishment. Anything that impairs this ability naturally causes rapid progression in the general disease and vice versa, general improvement will be more probable if the ability to eat and drink be fully restored.

A number of patients are living upon whom the operation was performed from ten to twelve years ago, as a palliative procedure, and in whom the resultant unexpected improvement in lungs and larynx was so complete that eventual arrest ensued.

One case of extensive laryngeal and pulmonary involvement, operated upon in 1902, lived until 1916, when he died of spinal tuberculosis; a second, with universal laryngeal involvement, second stage pulmonary tuberculosis and tuberculosis of the epididymis, made a perfect recovery so far as the larynx was concerned and lived for four years, when he died from extension to the kidneys; a third, who had an omega-shaped epiglottitis, infiltration of the right arytenoid, ventricular band and aryepiglottic fold, associated with large cavities in both lungs, and a general ichthyosis, made marvelous improvement after the operation, performed six years ago, and is now a college lecturer.

A considerable number of cases, of which these are typical, might be recorded and, while in no way indicative of the usual course run by these cases, show the occasional brilliant results achieved even in the apparently hopeless. They also demon-

strate the fact that a definite prognosis cannot be made, and that when all simple procedures have proved unavailing, radical interference is justified.

The improvement in accompanying lesions can be ascribed in large part to the same influence that occasions pulmonary betterment; the removal of pain, increase in nourishment taken, improved sleep and lessened cough.

Another important factor is the increased accessibility of the larynx to treatment. After the epiglottitis is removed it is often easy to destroy by galvano-cauterization lesions that were previously completely hidden. It is a fact that a surprising subsidence in these accompanying processes is frequently observed.

The chief indication for amputation, however, is and must remain the relief of pain, without thought to the eventual cure of either laryngeal or pulmonary disease. In this field, brilliant results are frequently obtained. The failures that are occasionally met with do not militate against the general advisability of the operation for the reason that when the pain is not removed, it would have been present in any event and the patient's condition is in no wise made worse.

There are necessarily many cases in which a combination of lesions exist, any one of which might in itself give rise to odynophagia or dysphagia, in which no one can foretell the exact role played by any one or more. Thus, with an edematous arytenoid, aryepiglottic fold and epiglottitis, the pain might exist in equal degree if any one of the three conditions existed by itself. In such instances one cannot say with any degree of certainty what benefit will follow removal of the diseased epiglottitis. If it is diseased by itself, the lesion will not only be cured but the pain permanently removed. Therefore it is strongly advised in every case of tuberculosis limited to the epiglottitis, whether the organ be involved in part or in its entirety, that it be amputated, or at least that the diseased section be freely excised. If other sections are involved, and pain exists, the diseased epiglottitis should likewise be removed. In such in-

stances the pain is overcome in a large number of cases while in many others it is lessened to a marked degree.

One of the most surprising things in surgery is to witness the sometimes complete disappearance of pain after this operation even when other vulnerable points are involved. Such relief, while oftentimes temporary, is not infrequently permanent.

The one great contraindication to the operation, in the author's experience, is that form of epiglottic involvement, either infiltrative or ulcerative, in which the process is beginning to involve the base of the tongue or the pharyngo-epiglottic folds. These progress so rapidly to a fatal and painful conclusion that operation offers no prospect of either arrest or palliation. If temporary relief be obtained it is of so fleeting a nature that it is no compensation for the nervous strain and discomfort of the operation. Such lesions, if incipient, are easily overlooked, and may be betrayed by nothing more than a slight fullness or puffiness, hence very careful inspection is demanded. The entire lateral walls and base of the tongue may and usually do break down within a few weeks after the very first signs of disease become manifest.

In these cases only is amputation absolutely contraindicated. In all others, if pain exists and is uncontrollable by other treatment, excision is advisable. No bad effect upon the general health has been observed. Complete anesthesia can be obtained and the operation itself need not, in the average case, require more than a half minute.

There is little pain from the wound itself, and usually the relief from the previous suffering is so marked and immediate that it at once outbalances the soreness occasioned by the incision.

Do you wish to read a paper before the next annual meeting? If so, send in your name and the subject, without delay.

FASTING AS A THERAPEUTIC MEASURE IN THE TREATMENT OF GASTROINTESTINAL DISORDERS IN THE TUBERCULOUS.*

C. D. SPIVAK, M. D., DENVER.

From the days of Harvey when consumption was cured by prescriptions containing powdered red coral, white amber, crab's horns and julep "to temper the sharpness of the blood", and by decoctions of crabs' eyes and woodlice¹ to our own days which began a short quarter of a century ago with the administration of alcohol in large quantities and creasote, guaiacol and tuberculins, the tendency is natureward.

Physiologic therapeutics is now in the ascendancy in internal medicine, and is slowly but surely crowding out drug medication. The study of the curative methods in tuberculosis has contributed more to the elucidation of the scientific principles and the advancement and popularity of physiologic therapeutics than that of any other disease.

Man breathed air since the day when "the Lord God breathed into his nostrils the breath of life" (Gen. 2, 7), and yet it is only during the last quarter of a century that we learned to admit air into our habitations. Tuberculosis taught us the lesson of ventilation.

The sun shone in its effulgence since the fourth day of creation when "God said, let there be light" (Gen. 1, 15), but the prophylactic and therapeutic virtues of the sun have been revealed to us in the regions towards which the consumptives naturally gravitate—the regions where the number of sunshiny days in the year are greatest. The tuberculous are the original sun-worshippers.

Man sustained his life by ingesting of food since the day when "God said, . . . every herb bearing seed . . . and every tree yielding seed, to you it shall be for food" (Gen. 1, 29), and yet it is only during the last half of a century that we were enabled to have a mere glimpse into the intricate problems of digestion, absorption and assimilation. For many and valuable as are the contributions

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

of Liebig, Pettenkofer, Voit, Pflüger, and Rübner of Germany, Pawlow of Russia, Cannon, Atwater, Benedict, and Carlson of the United States, one can say with certainty, even if it be with blushing and regret, that not a single problem in metabolism has been definitely and ultimately settled. We are certain only of the fact that air, light and food are the trinity of sources whence life springs.

In this paper I wish to record briefly my theoretic considerations and practical experiences with a certain phase of the food problem, namely, absolute diet or fasting in the treatment of gastrointestinal disorders in the tuberculous.

At the annual meeting of the Colorado State Medical Society held last year, I read a paper on fasting² in which I recorded my theoretic consideration and practical application of fasting in the treatment of diseases of the gastrointestinal tract in the otherwise healthy individual. Permit me to quote a few sentences from that paper which will serve to link the ideas of the past with the present and show their intimate relationship and continuity:

"Among the remedial measures which I use in my practice, rest occupies the place of honor.

"Rest not only prevents the further breaking down of tissues, but affords a chance for the tissues to store up new energy.

"In the ordinary life of a normal individual, the periods of activity and rest are constants, and are balanced unnoticed and unobserved. But as soon as the balance between the two is disturbed, the equilibrium can only be reestablished by making up the deficit. The greater the activity that produced certain abnormal phenomena the longer must be the rest, and vice versa. The length of time which is required by nature for the repair of an injury must be in proportion to the severity of the injury, and the more severe the injury the longer time is required for the perfect recovery of the disturbed functions. A heart, for example, that has worked for one month at a rate of twenty beats per minute over and above normal will, mathematically speaking, require an amount of rest equal to 864,000 heart

strokes (twenty beats multiplied by sixty minutes multiplied by twenty-four hours multiplied by thirty days). The meaning of such a theoretic formula is: the overworked heart in order to regain its normal equilibrium must use an amount of rest proportionate to the amount of the extra work performed. To use a homely example, a man working six days a week requires one day of rest. A man working twelve days consecutively must have at least two days of rest.

"The mechanism of an animal has been likened to that of a machine, and generally the analogy holds good. When a machine is undergoing repairs the whole machine is brought to a standstill, or at least the part to be repaired is given absolute rest. We must do likewise when we undertake to repair the digestive tract.

"Fasting is rest for the gastrointestinal tract.

"It is evident that no matter what the derangement of the gastrointestinal tract may be, whether gastritis, hyperacidity, anacidity, ulcer of the stomach, of the small or of the large intestine, there is present an injury to the integrity of the organ and consequently it cannot perform its function efficiently. The logical conclusion is that the stomach and intestines should be put at rest, should cease their normal functions until the repair is effected. In short, rest for the gastrointestinal tract means the cessation of feeding, or in other words fasting."

I have applied this form of rest cure in many cases and have found that nature rewarded my patients for their heroic struggle to control temporarily their desire for food, with *restitutio ad integrum* in the majority of cases, and certain relief in all cases including malignancy.

Having liberated myself from the trammels of prejudice which for centuries taught that the sick must be fed thrice daily and when very sick even oftener, there remained one disease to which I did not dare to apply the logical deductions of my rest theory, namely, tuberculosis. We have been taught that the improvement of tuberculous patients is measured by the gain in their weight. Hence arose the adage among pa-

tients that they should eat once for themselves, once for the germs and once to gain weight. For over three decades superalimentation or forced feeding was practiced, and is still practiced with disastrous results. The application of common sense ideas to the dietetics of the consumptive has at last convinced rational thinkers that a rational diet does not permit the idea of over feeding. And yet all text books and monographs with the exception of that of Fishberg,³ although they warn against "stuffing," nevertheless recommend quantities above those given to well men at hard work. They care not to be wedded to superalimentation, but they permit themselves an innocent flirtation.

Coleman⁴ writes:

"While it is possible to overburden the digestive tract of the patient, the danger is insignificant compared with the likelihood of not getting enough food to make good his wastes and to fortify him against the ravages of the disease."

Bonney⁵ writes: "Clinical observation, at least, confirms the statement that in many cases, the appetite and digestion are notably improved upon the adoption of an intelligent effort toward superalimentation."

Pottenger in his otherwise illuminating chapter on Rational Diet,⁶ cannot sustain his role as a consistent thinker on the subject by breaking in with the following reflections: "When we consider the demands which are made upon the body of the tuberculous patient, at least after he reaches the stage of necrosis and wasting, it would seem that his requirements for protein are above normal, and when we consider the loss of adipose tissue that takes place, we might also add with reason an extra amount of fat to the dietary."

Kemp⁷ recommends forced feeding "especially by Russell's method".

As you notice the authorities are still longing for the full dinner pail for tuberculous patients. Fortunately having been in the habit of occasionally smashing idols of all descriptions, I have gathered up courage to deliver the last iconoclastic blow. I have used common sense as my weapon. Instead of comparing the human living body to a machine in the abstract, as I did in my paper

last year, I reasoned that food stands in relation to the body, as far as the supply of power is concerned, as gasoline does to the motor. The motor will run smoothly only when a certain definite quantity of gasoline is used. Too much gasoline will impair the efficiency of the engine and clog it with unburnt carbon. It is the same with food. The digestive system in tuberculosis is, like all the other systems, below its normal rate of work. Where is the logic in assuming that if we overwork one of the weakened systems, the digestive system, the other systems, the lungs and heart, will be benefited thereby? The additional weight added to patients which follows overfeeding rather points to malassimilation. The added bulk is composed of fat, and fat people are not healthy. Lungs, heart and kidneys which minister to one hundred and fifty pounds of body cannot do justice to a body of two hundred pounds. Hence these organs must suffer deterioration. I have therefore concluded that the rational diet for a tuberculous patient must be in no wise different from that of a well man at rest, and in the case of advanced and febrile cases the quantity must be correspondingly diminished.

Having accustomed myself to think rationally on the subject in relation to the tuberculous without complication, it was but natural to make one other step in the right direction, namely, to apply the same logic to the treatment of cases of tuberculosis complicated by gastrointestinal disorder. A patient who vomits a certain meal should omit that meal during a few consecutive days. A patient who has no appetite should omit one, two or more meals until the appetite naturally returns. A patient who suffers from pain following the ingestion of food should abstain from eating a number of meals.

I have been enabled to apply my theory to practice at the Sanatorium of the Jewish Consumptives' Relief Society, Edgewater, Colorado, where I am privileged to be attending gastroenterologist. At first the patients looked at me with wondering eyes. They thought there was something wrong in my upper story. I think even our superintendent and resident staff shook their heads

behind my back and probably thought my vagaries to be a symptom of senility. One of the interns even got up a pun, and said "Our gastroenterologist prescribes instead of the usual HCl as a remedy for the patients, a remedy for the H. C. of L. Some of the patients accused me of profiteering and others of being in the employ of the government under direct instructions from food dictator Hoover. I am glad to place on record the fact that the patients have changed their minds as did also later the physicians. In fact, many patients in the sanatorium ask my permission to abstain from a meal or two. The resident physicians and even the attending physicians have adopted my plan of prescribing unhesitatingly abstinence from meals. The patients have learned that in many cases such control of their appetites benefits them immensely and that so far no untoward effects have been noticed, even from fasts lasting two and three days.

In conclusion I wish to emphasize the following points:

1. The diet for the tuberculous must be based upon the same calculations as that of the healthy man at rest.

2. Abstinence from one or more meals in certain gastrointestinal disorders characterized by nausea, vomiting, pain and diarrhea is indicated as a remedial measure par excellence in all cases whether tuberculous or not.

206 Metropolitan Building.

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²Colo. Med., 1916, xiii, 368.

³Fishberg: Pulmonary Tuberculosis, 1916.

⁴Klebs: Tuberculosis; A Treatise by American Authors, 1909.

⁵Bonney: Pulmonary Tuberculosis and Its Complications, 1910.

⁶Pottenger: Clinical Tuberculosis, 1917.

⁷Kemp: Diseases of the Stomach, Intestines and Pancreas, 1917.

DISCUSSION.

Dr. Herbert B. Whitney, Denver: I cannot speak at length upon the subject which Dr. Spivak has covered in his paper, namely, the question of tuberculous patients and the treatment of them by rest of the stomach along the lines he has suggested. But one of the principles enunciated in his paper reminds me of something which I wish to mention for the benefit of the younger men. One of the books which I read twenty-five years ago, which produced a greater impression upon me than anything which I have encountered

in the field of medical literature, was a book by Franz Hoffman on Rest and Exercise in the Treatment of Disease. I was very deeply impressed by the principles enunciated in this book of some five hundred pages. I feel that it would be a great privilege for any young man to get hold of that book and read it, because nothing perhaps has been so useful to me or of so much benefit in my practice as the careful observance of the principles of rest and exercise in the treatment of chronic disease. If you think of this subject for a moment, you will realize that we have only these two methods of reaching most of the internal organs. What can we do for the liver, the heart, for the kidney, except one of these two things, either to afford rest by some method, or on the other hand to stimulate the function of the organ? There is no specific remedy for heart disease, or for a lesion like endocarditis; and when we encounter certain chronic diseases and infections, we can follow no better course than to assume what Dr. Spivak has so strongly emphasized in his paper, that the chief principle of treatment must be rest for the diseased organ, although in some cases it may be that exercise will be more strongly indicated. However, I doubt if the question of superalimentation in tuberculosis can be quite so easily disposed of, and I should hesitate to discard a mode of treatment which has given, in many cases, such good results.

Dr. H. A. Smith, Delta: It is a little out of my line to talk on the stomach, but good health resolves itself into one principle as enunciated by Dr. Spivak, namely, nutrition. The chiropractor, the dietist, and the food cranks are getting results in cases that are slipping away from the doctor because he does not want to take the pains and go to the trouble of making a correct diagnosis, or of instructing his patients in regard to diet, and so forth. That is the thing to do. If a doctor will go to the trouble to tell these patients how to regulate their diet along certain lines, and tell them how much to eat, and how many meals a day to eat, he will get results in this class of cases where nutrition is disturbed indirectly. A patient may not complain of his stomach at all. In all cases there is not an acute condition present, and it may be only a question of nutrition. I have had very satisfactory results in this class of cases by regulating the patient's diet and the living habits, and by telling him what to do and what not to do.

Dr. M. R. Fox, Sterling: I have not anything very definite to say on this paper, although I feel like saying amen to Dr. Spivak's remarks because diet is a very important part of the practice of medicine. As we progress we are learning more and more to give less medicine, and what the average doctor needs in dealing with these cases is a little more horse sense. These patients should be instructed what to do and what not to do, what to eat and what not to eat. If there are errors of the digestive system from overeating and unsuitable food, then advice along the line of rest is what such a person needs. Many times in my practice by giving these patients proper advice, telling them what to do, with the use of a little medicine, and taking time to find out what I desire, I can accomplish good results. I feel that this paper is a very important one and well worthy of our consideration.

Dr. Robert Levy, Denver: I am sure there are men practicing internal medicine and particularly some who are devoting themselves to the subject of tuberculosis who will take exception to what Dr. Spivak has presented to us this morn-

ing. I have nothing very definite to say for or against suggestions made by the reader of the paper but would like to call attention to the fact that for many years superalimentation has been practiced by some of the very best and most reputable authorities in the treatment of tuberculosis. In many instances tuberculous patients with poor appetite or absolutely no desire for food have by forced feeding developed an appetite with the result that they have voluntarily thereafter increased their food intake with continued improvement.

Dr. Julius L. Mortimer, Denver: I want to emphasize one point in connection with this paper, and that is, in the feeding of invalids or tuberculous patients an effort should be made to prepare the food in such a way that it will be inviting to patients. One can accomplish more in that way than if the food is simply handled in the ordinary manner. I have seen patients at sanitariums eat a great deal more because the food was presented to them in a very inviting, cheerful manner, and that served to stimulate their appetites. I believe an effort should be made in that direction. There can be no possible doubt that food, good food, properly chosen, daintily prepared and eaten in cheerful surroundings is our sheet anchor in this disease.

Dr. Kate Lindsay, Boulder: I have listened very attentively to this paper and the discussion on it, and in regard to food tolerance, I wish to refer to the work of Allen and Josslyn in connection with diabetic cases. The results from treatment by these men have been very gratifying because they studied their patients individually and they found their food tolerance. If you will look in the last number of Archives of Internal Medicine, you will see that patients with diabetes gain in strength and in weight of from eight to twelve ounces a day. It is common sense for us to study our patients individually, both men and women, find out their food tolerance in tuberculosis and in other diseases, then raise the tolerance and work on a common sense basis.

Dr. Spivak (closing): I thought that the representative physicians who make tuberculosis their specialty would bring forth some new ideas as to why they overfeed their patients. Of one thing I am sure, and this is in regard to Dr. Levy's remarks, no one recommends superalimentation at the present time. I have carefully gone over the most recent literature that I could lay my hands on, and they all warn against superalimentation; but what they hold onto very tenaciously yet is that a tuberculous patient needs more food than a healthy person doing hard work. This is the only thing that we have yet to combat in a measure, and I believe that within the next few years it will be satisfactorily settled. There is absolutely no logic in such a theory. To assume that a weak person, with a weak heart, with weak lungs, can have a stomach stronger than a person that has a good heart, and a good pair of lungs, is ridiculous. All functions must be below par in the patient who is sick, and therefore digestion must be reduced. Such cases therefore cannot handle the quantity of food that a healthy person can. A boiler cannot be stronger than the engine. The same holds good with reference to the stomach. We see quite frequently in cases of overfeeding that a patient will gain weight; that weight goes absolutely into a thing that is harmful to the patient, because it goes into fat, and a patient who increases in weight when ill may find that increase detrimental. It is true that we can increase their weight from

twenty to forty pounds, but we will find their breathing capacity will be very materially diminished thereby. They cannot walk as easily as they could before, and there will come a time when they will break down and fall to pieces, as they usually do, particularly those who have gained much weight in a short time. Let us take, for example, a heart that is doing work for a man weighing one hundred fifty pounds. If within six or eight weeks that man weighs one hundred seventy-five or one hundred eighty pounds, that heart has not increased proportionately in its capacity, neither have the lungs increased in capacity; therefore, the aeration and circulation of the blood have not kept pace with the twenty or thirty pounds extra weight that the man has taken on. I am sure, that if we take into consideration the above logical reasoning, we will render a great deal better service to our patients.

ROENTGEN DIAGNOSIS OF LESIONS OF THE ESOPHAGUS.* †

J. A. MATLACK, M.D., LONGMONT.

Roentgen diagnosis applied to the gastrointestinal tract is, comparatively speaking, a new procedure. Lesions of the esophagus were susceptible of correct diagnosis long before the use of the x-ray was considered possible in this field. We shall not, therefore, claim that the x-ray has enabled us to make new discoveries in this branch of alimentary diagnosis, but rather that by this method we may in many cases make an esophageal examination with greater ease, simplicity and accuracy, and with greater comfort to the patient, than would be possible under the older methods.

The only really satisfactory way to demonstrate the possibilities of this method of examination is by observation of the patient before the fluorescent screen, but this being impossible in a meeting of this character, I shall attempt to elucidate my subject by means of lantern slides. I am indebted to the Mayo Clinic for these slides, and for an opportunity to observe a large number of esophageal lesions. I am convinced that such lesions are much more common than is generally supposed, and that a more frequent employment of the fluoroscope will reveal them.

The examiner must, of course, be familiar

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†The writer is indebted to Drs. Carman and Miller of the Mayo Clinic and their publishers, W. B. Saunders Co., for the use of the illustrations accompanying this article.

with the appearance of the normal esophagus. The examination is made by placing the patient in an oblique position behind the fluorescent screen, with the tube behind him, in such a manner that the rays will pass between the spine and the heart and large vessels, and thus clearly outline the esophagus in its position in the posterior mediastinum. The patient is directed to swallow a mixture of barium sulphate in mucilage of acacia. This makes a very thick, tenacious mixture which makes slow progress down the esophagus and tends to adhere to its lumen. It is important to know that there are certain anatomical narrowings and irregularities which must not be mistaken for lesions. On account of these irregularities the barium mixture will pass down the normal esophagus somewhat spasmodically, hesitating and deviating at the anatomical points of narrowing, more especially at the level of the cricoid cartilage, near the tracheal bifurcation and at the cardia.

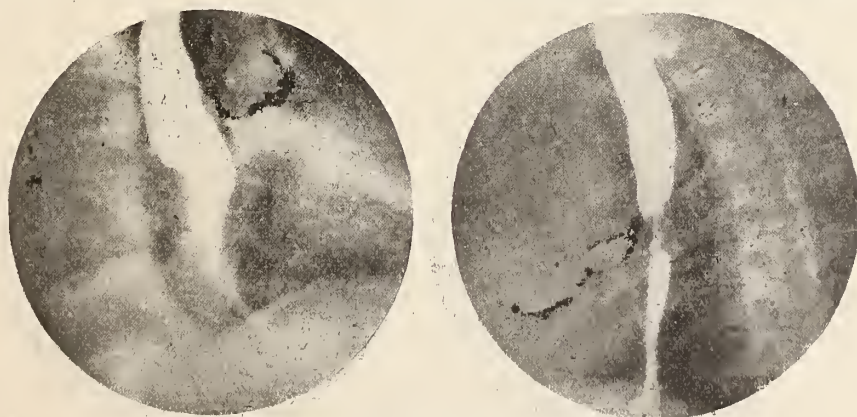
Whenever a patient seeks the attention of a physician because of an affection of the esophagus, he has nearly always reached a stage where a lesion, if present, can be demonstrated by x-ray examination. The most constant and characteristic symptom complained of in all lesions of the esophagus is difficulty in swallowing, and this symptom indicates, usually, that some measure of obstruction has developed. The supposed obstruction may be only imaginary, in which event the roentgenologist can readily demonstrate the fact that any substance which passes the pharynx glides unobstructed into the stomach.

Obstructions of the esophagus may be

classified as extrinsic and intrinsic. Extrinsic lesions, such as mediastinal growths, deformities of the spine, pericardial effusions, or aneurisms, are apt to encroach upon the lumen of the esophagus and cause dysphagia. Such extrinsic lesions cause deviation of the esophagus, but not complete occlusion, and their presence and nature can be diagnosed by physical examination and radiograms. Intrinsic lesions present no very great variety. The esophagus is not often the seat of the commoner forms of inflammation and ulceration which affect contiguous structures. It is, however, frequently the site of malignant and benign strictures, diverticulæ and spasmodic constrictions.

Strictures, whether partial or complete, are readily demonstrated, but their exact nature cannot always be estimated by the x-ray alone. In benign stricture the radiograph usually shows an obstructive lesion smoother in outline, and less extensive, than that seen in carcinoma. The stricture may, however, become complicated by ulcerative processes, and in this event the shadow will be irregular, and a differential diagnosis cannot be made without consideration of clinical data. Most benign strictures are due to the swallowing of caustic solutions or acids, with the resulting inflammatory processes and cicatricial contraction. There is usually a history of long standing and gradually increasing dysphagia, with emaciation corresponding only with the degree of starvation resulting therefrom. Benign strictures, if properly and cautiously treated, frequently make a satisfactory recovery.

Carcinoma usually gives a characteristic radiographic picture. The shadow shows an

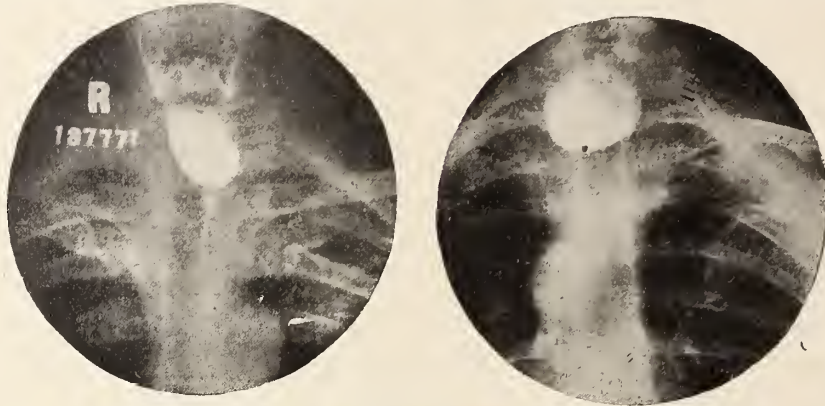


Illustrative Cases of Cancer of the Esophagus.

irregular obstruction, with encroachment on the lumen of the esophagus for a considerable distance. There is usually no very great dilatation of the esophagus above the obstruction, in either benign or malignant stricture. Here, again, the clinical aspects of the case must be considered. Carcinoma is

tion of the esophagus. On fluoroscopic examination a portion of the bariunized medium enters the diverticulum and accurately outlines it. This condition is curable by resection of the sac.

Cardiospasm is a frequent cause of esophageal obstruction. This condition may be de-

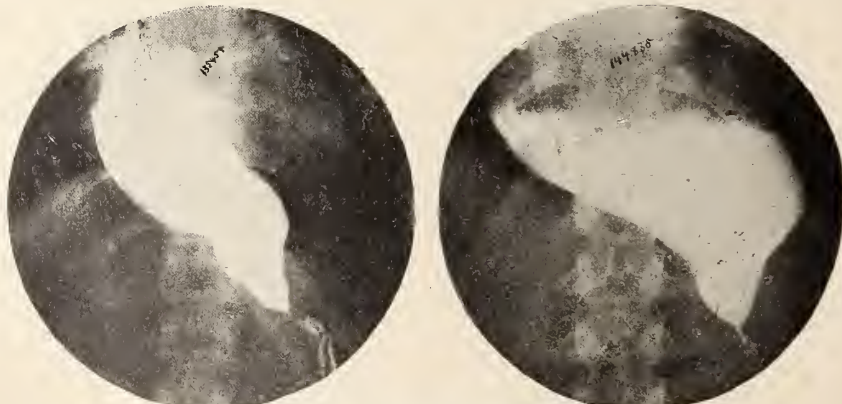


Illustrative Cases of Diverticulum of the Esophagus.

usually a disease of advanced life, the dysphagia is commonly of short duration and rapid progress, often there is considerable pain, and the emaciation and cachexia are greater than can be accounted for simply by lack of nourishment. When the malignant nature of the lesion is clearly established, it may be looked upon as incurable.

Obstruction of the upper portion of the esophagus may be caused by the so-called pressure or pulsion diverticulum, which originates at the pharyngo-esophageal junction. A patient afflicted with this lesion will complain that he is able to swallow a few mouthfuls of food, but that it does not reach the stomach, and that subsequent mouthfuls may pass down, but with difficulty. This is due to the fact that the first of the food taken enters the diverticulum, and distends it so that pressure is made on the adjacent por-

tioned as a spastic contraction of the esophagus at the cardia, due to vagus irritation, and leading to hypertrophy at the point of contraction and dilatation above. The roentgen appearance of cardiospasm is very characteristic. The barium shadow shows the esophagus as a fusiform sac of regular outline, sometimes with enormous dilatation, tailing out to a partial or complete obstruction at the cardia. If food particles are present in the sac the shadow will be irregular, and the examiner may be misled into a diagnosis of malignant disease. Consideration of the clinical aspects of the case, together with reexamination after washing out the esophagus, will make the diagnosis clear. These cases present an opportunity for a most spectacular cure. By a single forcible dilatation with the hydrostatic bag a patient who has fought starvation for years may



Roentgenograms Illustrating Cardiospasm.

become immediately able to swallow any and all kinds of food.

Summary: In partial or complete obstruction of the esophagus the roentgen method of examination is usually satisfactory and conclusive. In the hands of a trained operator the technic is simple and the procedure is not uncomfortable to the patient. In all cases, final interpretation of the roentgen findings must be made only after careful consideration of all available clinical data.

DISCUSSION.

Crum Epler, Pueblo: This is one of the newer important subjects as Dr. Matlack has said. I have here four slides which I wish to show in connection with two cases. The first case was referred to me by Dr. H. A. Black. The patient is a woman, fifty years of age, who had difficulty in swallowing. Fluoroscopically it was not possible to determine whether this stricture was spasmodic or not. I used in this instance an ingenious device, which is not new or original; it consists of a sausage skin arrangement for determining the point of constriction. Fluoroscopically it went on down. This woman had lived for a number of years with a tuberculous son and had taken care of him. She was a widow, her husband having died a year or two before of hemiplegia, which was possibly syphilitic. The slide shows the esophagus and the point of constriction. This portion I show you is the sausage skin tied at this point and ballooned out below the point of constriction. This picture was taken twenty minutes after putting barium into the meal. The constriction was continuous.

The next case, which was referred to me by Dr. J. M. Keeney, was a Japanese whose age I do not remember. At the point I show you there was a decided constriction which was suspected of being cancerous. This constriction was determined fluoroscopically. This picture was taken in from five to seven minutes after the injection of barium, and the other one in about twenty minutes. The barium is gradually dribbling through.

The next slide is a post-mortem photograph of the specimen. Dr. Keeney will tell you what he did between the other radiographs which were taken and this. If you notice carefully, the esophagus is split open down to the cardiac opening. At this particular point you will see a line there and a line here down to this point which is normal esophagus. It is laid open from this point to that point like a book, but here you will see the new growth open as it were. There was complete constriction at that point, and also one at this point, as you will see from the specimen. One portion of the esophagus had not become involved by the malignant tumor. It is a case of carcinoma.

Thomas J. Gallaher, Denver: I wish to congratulate Dr. Matlack on his excellent paper. Exact diagnosis is the goal to be striven for, and we are more and more attaining that goal, and the esophagus is no exception.

Radiography has its limitations in this work, and it must be supplemented wherever possible by ocular inspection. Do not be blind if you do not have to be blind.

The diagnosis of diverticulum by means of roentgenograms is a comparatively simple thing. The diagnosis of cardiospasm by roentgenograms is a comparatively simple thing, but let us suppose that the cardiospasm or esophagismus is produced by cancer; is it not better to look? So I say, in all cases we must supplement radiography by direct ocular inspection. You may remember the Plummer method of making a diagnosis with the x-ray photograph, threading a bougie upon the previously swallowed silk, lying there it becomes lax and passes into the diverticulum and stops. On making the thread tight the bougie will pass along the normal lumen into the stomach, and it enables one to make a diagnosis. This method was developed by Dr. Plummer, of Rochester, Minnesota.

As to cardiospasm and diverticulum, there are a few rational symptoms we should bear in mind. In a diverticulum the patient will expectorate or regurgitate food at any time, say an hour afterwards, or two to five hours afterwards, and it is rather constant; but in cases of intense cardiospasm the ejection of food will occur almost at once.

Cases of globus hystericus occur in the practice of all practitioners. These patients are given bromide and opiates, but they can be cured by a little intelligent esophageal treatment. Often the simplest instrumentation will cure them. Also the use of the stomach tube will cure them without dilatation.

The diagnosis of cardiospasm under direct inspection is most useful. You can pass the esophagoscope down to the point of constriction and you may endeavor to pass the instrument through the hiatus, but it will not go. It looks like a cervix. If you use local anesthesia anything will pass the original spasm, but your instrument will pass this constriction like magic. It will go into the stomach. You need a local anesthetic in these cases. Your diagnosis is exact and you know whether you have a growth to deal with or not. Cardiospasm is the first step in the formation of a diverticulum, and there may be a local constriction in the walls of the esophagus, and it is important to diagnose cardiospasm and prevent the formation later on of diverticulum. No general anesthetic should be given in the diagnosis of cardiospasm.

Dr. Matlack (closing): I am glad Dr. Gallaher has brought up the necessity for instrumental assistance. In the diagnosis of any lesion of the gastrointestinal tract, and of these lesions I have spoken of in particular, we must make use not only of the roentgen ray but of all methods of diagnosis. The history, the inspection of the patient, the use of instrumentation, and the x-ray are all important aids in knowing the exact lesion. If we are dealing with a benign stricture of the esophagus we can do something for it by dilatation. On the other hand, if you are dealing with a malignant stricture, once the diagnosis is established, a very gloomy prognosis is in order. It is the same with cardiospasm and diverticulum. If we can accurately establish the diagnosis by any and all means, then we have a perfect knowledge of the condition and we can do something for the patient.

Do you wish to read a paper before the next annual meeting? If so, send in your name and the subject, without delay.

ACUTE PERFORATION OF THE ABDOMINAL VISCERA, SPONTANEOUS AND TRAUMATIC.*

CHAUNCEY E. TENNANT, M.D., F.A.C.S.,
DENVER.

Acute perforations in the abdomen are always serious, because when they do occur we are confronted with a great probability of early death of the patient unless operative measures are immediately undertaken. The outcome for the patient is, therefore, largely determined by the judgment exercised by the medical attendant.

The percentage of mortality is, of course, largely dependent upon the location of the perforation and the type of structures immediately adjacent to the ruptured viscera. For example, perforations about the duodenum are often followed by recovery, because of the relative sterility of the contents and the immediate proximity of the gall-bladder, liver, transverse colon and suspensory ligaments, any and all of which may act as factors in plugging the leak, thereby preventing the escape of the irritating material.

In perforations about the fundus of the stomach, however, unless the perforation happens to be located on the posterior surface, there is but little chance for spontaneous recovery, because of the absence of any organ in close proximity to the stomach and also because of its size and capacity. Its mobility is perhaps another factor in the prevention of adhesions and spontaneous plugging. Perforations of the pancreas are exceedingly fatal, although according to W. J. Mayo¹ there have been spontaneous recoveries observed. The high mortality here may be due in part to the character of infection and the necrosing factor which prevents the plugging of the perforation. Then, too, one must consider the usual associated cholangitis or cholecystitis, the pancreatitis usually having been a sequence to the former lesion.

Gall-bladder perforations are also serious because of the usual associated infections, and possibly, as W. J. Mayo¹ says, "The large majority of patients who have perforation of

the gall-bladder have had previous attacks of gall-stone colic, in some cases prolonged for several days, and they are more apt to die when perforation occurs into the free peritoneal cavity, not because of the nature or quantity of the contents of the gall-bladder, for both of these would be comparatively insignificant, but because, as a rule, they will not be operated upon for four or five days, feeling certain that the conditions are nothing more than previous attacks."

Perforations of the appendix are, unfortunately, too common in these enlightened days for us to consume time in discussing their deplorable occurrence, other than to remark in passing that it is a sad commentary on our profession when it does occur while the patient is under the care of a medical adviser.

Acute perforations in civil life are sufficiently frequent to occur in almost everyone's experience in a very short time after entering the profession. In modern war, in the trenches, however, the sharp punctures made by the modern conical missiles are comparatively rare when considered with those inflicted from shrapnel and hand grenades.

It is interesting to note the reports coming from the battle fields, now encouraging and now discouraging immediate operations upon these acute abdominal perforations, and it has been ever thus. Statistics, although they may be reasonably accurate, do not show the conditions, the pathology and the environment as they actually exist.

La Garde² says, "The skill and painstaking details of expert surgeons avail but little in the management of the large majority of gun-shot wounds in the abdomen." The mortality, according to this author, for the Russian wounded in Manchuria was 56 per cent, while that of the civil war some forty years before was 90 per cent.

Recent statistics from nine field ambulances and seven casualty clearing stations, for a period of six months, show a percentage of 1.92 of abdominal wounds out of the total number of wounded; the mortality in 1,098 abdominal wounds being 30.33 per cent.

Quénu³ reports statistics of Stern showing

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

300 cases of abdominal wounds treated conservatively with a mortality of 80 per cent, and 260 cases treated by operation with a mortality of 60 per cent. Mertens⁴ in a report based on observation in field hospital, on the Yser Canal during the battle, records 123 abdominal gunshot perforations, 91 with and 32 without gastro-intestinal injuries. Twenty-two were operated with 40.9 per cent recoveries. He also remarks that abdominal tension (rigidity), with sensitiveness on pressure, combined with costal respiration indicates intestinal injury or hemorrhage.

These statistics, however, are not altogether fair, for in the first place the slightly wounded and those who are able to ambulate are cared for at the expense of those who have fallen, and among the latter will be found many with acute traumatic perforations, probably with severe hemorrhage, who may later be recovered from the field and be sent back to the field hospital in the event that they reach the first aid station alive. The death rate is therefore that of the battle field. Rumor has it that more recently Dr. Crile has moved his operating rooms up close to the battle front in order to get these cases earlier, and I have no doubt that his statistics will show an appreciable lowering of the mortality rate in these acute abdominal perforations.

In comparing cases of abdominal injuries occurring at the battle front, in which operation has been done two, three or four hours after injury, with the total number of abdominal injuries, several surgeons recently have shown that the mortality of the unoperated patients is nearly three times as great as of those operated upon.

When these cases of acute abdominal perforation can be operated within the first eight hours following the perforation, the larger percentage of cases recover. As each additional hour elapses without operative interference a progressively higher mortality occurs. Consequently, it is essential that an early and positive diagnosis be made in order that the patient may be given the benefit of an early operation.

The symptoms are, therefore, of the greatest importance and, fortunately, are quite

classic, there being but very few exceptions to the rule. First, there is the initial and sudden attack with severe and excruciating pain, usually doubling the patient up into a marked flexion posture. Following this are the faintness and the characteristic facies and pallor occurring in abdominal shock. Then comes nausea and vomiting and, finally, muscular rigidity.

W. J. Mayo¹ says, "A curious thing about this muscular rigidity is that if no hemorrhage occurs at the time of perforation, as often happens in cases of traumatic perforation, an improvement comes on after the initial period of shock, yet this improvement is fatal. Any case which continues to have muscular rigidity, after the relief of pain from spontaneous causes, should be operated upon." Unfortunately this muscular rigidity is not always present. Lenander once pointed out the parietal layer of the peritoneum as being more sensitive than the visceral layer. Yet there are cases in which the parietal layer is not sensitive. Sometimes a patient may have symptoms of colic, or very definite and continuous pain for a time, and is quite sick for a few hours. Relief follows, but at the end of forty-eight hours he comes to the operation with the abdominal cavity full of pus, with definite shock and cyanosis. During this period there may have been absolute loss of the accustomed rigidity. It is therefore much better to err on the safe side in some of these cases in which rigidity is absent, but always to recommend operation in cases where rigidity persists after relief of pain from the initial attack has occurred.

It has been my experience to have at least one case of spontaneous rupture of the bladder and I am impressed with the comment Dr. W. J. Mayo has made on the subject, and believe it well worth emphasizing. He says¹: "When you do not know whether or not a man has intraperitoneal rupture of the bladder, get all ready to operate before you put a catheter or sound into the bladder, because of the rapid infection which takes place. No matter how sterile the catheter, no matter how sterile we believe the urethra to be, the mere introduction of an instrument into the bladder under such circumstances will prob-

ably be followed shortly by fulminating peritonitis; therefore make your arrangements to operate at once following your conviction that perforation does exist."

In conclusion but little can be said on this interesting subject other than to mention the imperative necessity for an early diagnosis of these acute abdominal perforations and to suggest that the diagnosis should more frequently be made at the expense of an exploratory operation.

612 Empire Building.

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²La Garde: Gunshot Injuries, 2nd edition, p. 245.

³Quénu: International Abstract of Surgery Sup. to Surgery, Gynecology and Obstetrics, 1917, xxiv, 619.

⁴Mertens: Ibid. 583.

DISCUSSION.

Leonard Freeman, Denver: A paper of this kind at this particular time, when so much attention has been drawn towards perforating gunshot wounds of the abdomen, is of importance and deserves that something should be said about it. Much of the paper was directed towards the question of diagnosis, and, after all, that is the most confusing and the most difficult thing in these perforating injuries of the abdomen. I do not suppose there is a man here who has not been unutterably confused and at sea to determine whether a missile has perforated the abdominal cavity, or whether a gunshot wound or a stab wound has perforated one of the hollow viscera, and I presume that this confusion will always continue, no matter how much we study the subject. Dr. Senn thought he had solved the problem by injecting hydrogen gas into the rectum. He supposed the hydrogen gas would pass out of the perforation in the bowel into the peritoneal cavity, and then perhaps out of the wound, and could be detected by lighting it upon the surface of the body. That proved to be fallacious, just as all the other symptoms we know anything about seem to prove fallacious at times. Take the symptom of abdominal rigidity that the doctor laid so much stress on in his paper. That symptom is extremely characteristic of perforation of a hollow viscus, but it is sometimes absent, at least for a time. I have seen cases in which there was perforation of the stomach, with the abdomen filled with the contents of the stomach, yet for a few hours after the perforation there was no rigidity to speak of. I have seen perforation of the pancreas, which the doctor includes in his paper, in which there was no rigidity for five hours after the initial break of the pancreas had taken place. But wherever there is board-like rigidity, I agree with him that operation should be done at once. Sometimes we may miss it, but very seldom indeed.

The symptom of vomiting is misleading in the extreme. It is a well-known fact that in perforations of the stomach, particularly from a gunshot or a knife, there may be no vomiting. The patient may not even be nauseated.

The rapidity of the pulse is deceiving. On two

occasions, at least, I have seen perforation of the stomach which led to death rapidly after the real symptoms had started, in which the pulse was practically normal for a time. I did not operate, and I made a mistake by not operating, because suddenly the man went to pieces and died from peritonitis.

The rise in temperature does not help us very much. A fall in temperature that comes with the initial perforation is much more suggestive than is the expected rise which sometimes does not take place, so that we are left in doubt.

As Dr. Tennant has so strongly emphasized, we should make an exploratory incision, at least in civil life, if we are in doubt. In military life it is an entirely different proposition, and, as he says, it depends upon the size of the bullet, the location of the hospital and the facilities for operating, how much the surgeons are hurried, and other matters. With small-bullet wounds people do get well without operation. In ordinary perforations of the large or small bowel, low down, death will occur if operation is delayed only a few hours. In perforation of the duodenum or the upper part of the jejunum, death may not occur, although operation is delayed for many hours. I have operated on such cases as long as eighteen or twenty hours after perforation, with recovery of the patient, although there was plenty of stomach contents within the abdomen.

C. E. Tennant (closing): I appreciate what Dr. Freeman has said in discussing my paper. There were a few points I desired to emphasize strongly, and just for that reason I left out many others which might have been presented. In the first place, I think pain is characteristic in almost all cases of perforation, even though the stomach may be empty, and that invariably the pain is severe. While abdominal rigidity must be considered as a strong diagnostic factor, many times it is absent.

Dr. Freeman called attention to the question of temperature. In my opinion pain is the strongest of the diagnostic symptoms. It is of sudden onset, and is usually followed by rigidity. In case of doubt, there is no harm in making an exploratory operation in civil life; in military life, the environment is different. But I do want to emphasize the necessity for an exploratory operation in those cases where there is any question of doubt, especially where there is an injury or bullet wound low down in the bowel, as these are absolutely fatal in nearly every instance. In other words, when in doubt, it is safer to operate than to wait.

EXTRACT OF HYPOPHYSIS CEREBRI IN POLYURIA.

J. B. GOOKEN, M.D., HOT SPRINGS, ARKANSAS.

In view of the interest manifested regarding the relation of disturbances of the hypophysis cerebri and polyuria, and the influence of the administration of extracts of this organ on the polyuria, the following brief case history is submitted. This particular case affords added interest because of the concomitant blood dyscrasia, an accompanying ascites and edema.

W. R. F., male, white; age, thirty-four years; occupation, street vendor; sent into Leo N. Levi Memorial Hospital October 8, 1917, with diagnosis of pernicious anemia.

The family history was unimportant.

Personal history: Patient does not remember having had any childhood diseases. A moderate smoker and at times has used alcohol to excess. Venereal history negative. Says he has always been well except for "malaria". Chronic appendicitis four years ago and operation for same.

Present illness: Patient noticed feeling of "weakness" and "run-down condition" eight months ago, which has become progressively worse.

Present state: Height, six feet and one inch. Weight, one hundred and seven pounds. Hair gray, which he states has been so since youth. The color of the face is a distinct bronze, neither the lemon yellow of pernicious anemia, nor the tan of exposure, although patient says he has always been "tanned" due to outdoor vocation. The pupils are equal and react normally to light and accommodation. The tongue is slightly furred, shows teeth indentations, protrudes in straight line with faint tremor. Teeth in good condition. No glandular enlargements. Skin soft, warm and moist. Marked emaciation. Mucous membranes almost colorless. Sebaceous cyst, about one inch across, over right mastoid region. Right inguinal hernia. Chest expansion free and equal. Lungs negative. Heart position normal; apex beat not visible but felt in fifth interspace; rhythm regular; sounds weak; no murmurs. Pulses equal, of low tension and volume; vessel walls normal. Blood pressure, systolic 100; diastolic 55. Pulse 60. Temperature 97°. Liver not enlarged, and on percussion is not found to extend below the costal margin. Kidneys and spleen not palpable. Deep reflexes abolished. Superficial reflexes normal.

Blood examination, October 8: hemoglobin, 40%; erythrocytes, 1,770,000; color index, 1.18; leukocytes, 7,700; polymorphonuclear, 70%, small mononuclear 17%, large mononuclear 10%, megalocytes 3%. The red cells show a marked variation in size with weak staining qualities, although no marked

poikilocytosis. Plasmodium malariae, not present. Blood Wassermann negative.

Urine examination: Amount twenty-four hours, 5,100 c. c. Specific gravity, 1.004. Faint trace of albumin. Few hyaline casts. Pthalein output, first hour 70%, second hour, 10%.

Patient became gradually weaker after admission to the hospital. A persistent cough developed. Bowel movements became involuntary, although at no time was there urinary incontinence. On October 19 there was almost complete exhaustion and patient was transfused (citrate method) with five hundred c. c. of human blood. This was followed by a slight chill, transitory increase in temperature to 100.6°, pulse ninety-two and emesis of yellow fluid.

October 22, blood showed: hemoglobin, 60%; erythrocytes, 2,000,000; color index, 1.5; leukocytes, 10,000; polymorphonuclear 75%, small mononuclear 15%, large mononuclear 10%. Urine: amount twenty-four hours, 5,000 c. c.; specific gravity, 1.006; faint trace of albumin and few hyaline casts.

October 28, a marked abdominal ascites and edema of the lower limbs developed, in consequence of which the weight increased to one hundred and twenty-four pounds. The urinary findings remained practically the same as previously. With the idea that the ascites might be due to a low blood viscosity or diminished content of solids, ten grams of glucose in fifteen c. c. of distilled water was given intravenously on October 31. November 2, twelve grams of glucose was given in the same way. There was no noticeable influence on the urine or ascites. On both occasions each voiding of urine for the following forty-eight hours was tested for glucose by Fehling's method with negative results.

Desiccated suprarenal gland was administered from November 6 to November 23 with no apparent effect.

Blood examination, November 6: hemoglobin, 75%; erythrocytes, 3,000,000; color index, 1.2; leukocytes, 8,500; polymorphonuclear 68%, small mononuclear 20%, large mononuclear 10%, eosinophiles 2%. No change in urinary findings.

Weight November 17, one hundred and twenty-nine pounds. Still excessive edema

and ascites. Encouraged by the experience of Herriek and Lewis as to the influence of spinal puncture on polyuria, twenty-five c. c. of spinal fluid was removed on November 17. The fluid findings were: cytology, 5 cells; globulin, albumin, Fehling reduction, normal; Wassermann negative to two c. c.; colloidal gold curve 0001000000. No change could be attributed to this procedure, confirming the experience of Barker and Mosenthal.

November 23, the administration of pituitrin was begun. This was given subcutaneously, dosage, $\frac{1}{2}$ c. c. of the "surgical" morning and evening. This was followed by a disappearance of the ascites and edema, and a great diminution in the polyuria.

Patient discharged December 17. Weight 126 pounds. Blood findings: Hemoglobin, 82%; erythrocytes, 3,700,000; color index, 1.08; leukocytes, 7,000; polymorphonuclear 72%, small mononuclear 20%, large mononuclear 5%, eosinophiles 3%. The morphology and staining qualities of the red cells were greatly improved. Urine: amount twenty-four hours, 1,700 c. c.; no albumen; no casts. Patient seen on January 20, following his usual business with no apparent discomfort.

The polyuria and the influence of the various medications can best be noted from the following table:

(Liquor Potassii Arsenitis was also carefully exhibited; fluid intake at no time restricted.)

Date	Amt. Urine 24 hours	Medication
Oct. 8....	5,100 c. c.	
Oct. 19....		500 c. c. blood transfused
Oct. 22....	5,000 c. c.	
Oct. 30....	4,800 c. c.	
Oct. 31....		10 grams glucose intravenously.
Nov. 1....	4,500 c. c.	
Nov. 2....	4,700 c. c.	12 grams glucose intravenously.
Nov. 3....	5,800 c. c.	
Nov. 4....	4,500 c. c.	
Nov. 5....	4,900 c. c.	
Nov. 6 to 16..	irregular variation, 4,100 to 5,000 c. c.	Desiccated Suprarenal Gland, gr. iv t. i. d., daily.
Nov. 17....	4,800 c. c.	Lumbar puncture, 25 c. c. spinal fluid withdrawn.
Nov. 18....	5,200 c. c.	
Nov. 19 to 22....	4,200 to 4,500 c. c.	Desiccated suprarenal gland gr. iv. t. i. d., daily

Nov. 23....	4,100 c. c.	Pituitrin (surgical) $\frac{1}{2}$ c. c. a. m., $\frac{1}{2}$ c. c. p. m.
Nov. 24....	5,000 c. c.	Pituitrin (surgical) $\frac{1}{2}$ c. c. a. m., $\frac{1}{2}$ c. c. p. m.
Nov. 25....	4,200 c. c.	Pituitrin (surgical) $\frac{1}{2}$ c. c. a. m., $\frac{1}{2}$ c. c. p. m.
Nov. 26....	3,200 c. c.	Pituitrin (surgical) $\frac{1}{2}$ c. c. a. m., $\frac{1}{2}$ c. c. p. m.

Following this beginning diminution of urine, from November 26 to December 17, the pituitrin was administered in the same dosage, twice a day. The twenty-four-hour urine continued to drop in quantity until it reached 1,700 c. c. on the day of the patient's discharge from the hospital.

Leo N. Levi Memorial Hospital.

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IMPORTANT NOTICE.

Major Harry D. Jump of the Committee of State Activities of the General Medical Board will address the physicians of Colorado at meetings to be held in Denver in the evening of May 1st, in Colorado Springs in the evening of May 3rd, and in Pueblo in the evening of May 6th. Major Jump will discuss a number of urgent questions with regard to the enrollment of physicians in the Reserve Corps or in the Volunteer Medical Service Corps, as the case may be.

The meetings will be open to the public. Physicians' wives are especially invited.

News Notes

Dr. B. F. Jones, pioneer resident of Goldfield, was found dead in his office March 18. He had been in ill health for some time previously.

Dr. Edward Burkhard of Delagua has resigned his commission in the M.R.C.

Lieutenant William A. McGugan of Denver has been ordered to Camp Kearny, California, base hospital.

Lieutenant C. O. Booth of Cheyenne Wells has been transferred from Fort Riley to the signal corps aviation school at Waco, Texas.

Lieutenant Ranulph Hudston recently returned to Denver from Camp Doniphan.

Senate bill 3433 was passed in March and referred to the House of Representatives. It provides that the uniforms and equipment of all officers shall be furnished and issued by the government at regulated prices and that they shall be of similar quality and price for all officers.

A student-faculty dinner arranged by the students of the state university medical school, took place at the Savoy hotel Saturday evening, April 6.

Major Clarence B. Ingraham was in Denver the latter part of March on a week's leave from army service.

The death of Dr. V. D. McKelvey of Denver occurred April 4, 1918. Dr. McKelvey was the third senior police surgeon of Denver to die within a year. The cause of death was pneumonia.

Dr. R. G. Walker of Denver died at his home March 21, from pneumonia, after only three days' illness.

Dr. T. J. Carlin of Denver had two ribs fractured in an automobile accident which occurred March 20. He is now going about again and attending to his practice.

Dr. Walter C. Metz of Denver has reported for duty in the M.R.C. at Fort Logan.

Dr. J. A. Rutledge of Woodmen, Superintendent of the Modern Woodmen sanatorium, has gone to California to spend a vacation of six weeks.

Lieutenant C. T. Knuckey of Lamar has received a call for duty in the M.R.C.

Dr. Earl G. Shaffer of Delta has been commissioned a lieutenant in the M.R.C. and ordered to hold himself ready for duty at any time.

Dr. Charles J. Lowen of Denver has just been dismissed from St. Anthony's hospital after a month's confinement there under treatment for a very severe infection of the left hand and arm which resulted from a needle prick received while performing an operation.

Dr. John S. Bouslog, formerly of Boulder, has removed to Denver where it is understood he has become associated with Dr. W. W. Wasson in the practice of roentgenology.

Dr. V. R. Pennock of Longmont has received his call to the M.R.C. service.

Dr. W. W. Frank of Glenwood Springs, now serving as regimental inspector in the M.O.R.C. with the rank of captain, recently spent a day at his home on his way back to Camp Lewis from the eastern coast.

Dr. Thomas F. Howell of Creede made a ten days' visit in Denver in the early part of March.

Dr. Haskell M. Cohen of Denver underwent an operation for appendicitis on March 14 and, following his stay at the hospital, went to Idaho Springs to finish his period of convalescence.

Dr. H. S. Shafer of Denver, who last spring received a commission as lieutenant in the M.O.R.C. and within an hour after receiving his call for duty suffered a chauffeur's fracture in his haste to get home to his family with the news, having recovered from his injury, has been ordered to Fort Logan where it is understood he will probably remain indefinitely.

The annual session of the American Medical Association will cover a period of five days in June, 1918, beginning the tenth. There will also be held a five days' period of clinics for the Fellows of the Association which, however, will begin Thursday of the week previous and overlap only the first two days of the session. These clinics will cover every phase of medicine and

surgery. All correspondence with the local committee on arrangements should be addressed to 25, East Washington Street, Chicago.

Captain C. W. Presnall of Trinidad, now in France, in writing to friends says: "Landed in France O. K. Spent three months on Swiss border in training with the Fifth Artillery.

"Since then have been going about all the time but can't divulge where I have been. Enjoy the work very much, excepting we can't find any wood and coal is not here. The next difficulty is that we have to stand in mud half way to our knees while eating."

Dr. Edward Delehanty spent a week in Colorado Springs in the early part of March.

Dr. J. H. Brown of Colorado Springs has been promoted to a captaincy in the M.O.R.C. and is now stationed at Camp Logan, Houston, Texas.

Dr. W. P. Woods of Forbes has recently moved to Longmont and taken over the offices of Dr. W. J. White, who is in the army service.

Dr. S. B. McFarland of Longmont, lieutenant in the M.O.R.C. was ordered in March to report for duty at Fort Riley.

Lieutenant Harold Macomber of Denver, in writing to his father, Dr. G. N. Macomber, says he is in charge of a pneumonia ward at Camp Bowie, Fort Worth, Texas, and is very busy. There have been a good many cases of pneumonia, but their number is now diminishing.

Major Harry D. Jump is visiting a number of cities of the west in the interests of the Medical Officers' Reserve Corps and the Voluntary Medical Service Corps. His itinerary has now been arranged so that he will be in Denver May 1, Colorado Springs May 3, and Pueblo May 6. In this connection, the following is quoted from Major Jump's letter to Major W. W. Grant outlining the purposes of his visit (the dates were subsequently changed above): "The object of the Medical Section of the Council in sending me to Colorado is to confer with the State Committee of Defense, Medical Section, as to its work and to endeavor to stimulate a large enrollment in the Reserve Corps. We do not desire to interfere in your work, but to supplement it and help you. We appreciate that the problem in Colorado is different from that in other states and that a visit to you will give us a better understanding of your difficulties. I will ask you to arrange for me a meeting of your state committee on May 4th. I hope this will be a full meeting, for I want to talk over with you the Voluntary Medical Service Corps, the division of the physicians into those eligible for the service and those not, and other matters of importance".

Dr. R. P. McGee of Denver, formerly a lieutenant in the M.R.C., has been promoted to the rank of major.

Late advice from Dr. C. T. Burnett of Boulder is to the effect that he has arrived safe in France.

Dr. William Fleming, until recently resident physician at the Denver county hospital, was called for duty in the M.R.C. in the early part of April. It is reported that he will be assigned to orthopedic work.

Dr. J. E. Tomlinson, formerly of Denver, has recently located in Oak Creek and will be engaged in general practice.

Lieutenant A. G. Taylor of Grand Junction has been called to Fort Riley to enter training in M.R.C. service.

Medical Societies

CITY AND COUNTY OF DENVER.

The Medical Society of the City and County of Denver held its regular business meeting Tuesday evening, March 5, 1918. President Moleen was in the chair.

Resolutions expressing sympathy with Dr. Wm. C. Finnoff for the death of his wife, were read and adopted.

The secretary read a communication from Dr. Shufeld in reference to building a new U. S. Army Medical Museum. He wished the medical societies over the country to assist by their influence in obtaining an appropriation from Congress. The matter was referred to the board of trustees.

Dr. O. M. Shere, secretary of the medical section, Colorado State Committee of the Council of National Defense, called attention to the Owen-Dyer bill now before Congress and asked the support of the society. He put the motion that our society wire the congressmen from Colorado and ask their support in behalf of the above bill. The motion was carried.

Dr. E. E. Kennedy, secretary of the State Board of Health, brought up again the matter of Colorado's care of discharged soldiers afflicted with tuberculosis. He said the State Board had not the funds to cope with the problem. He made several recommendations among which was one for the establishment of a state sanitarium. The question was discussed by Drs. C. D. Spivak, W. H. Sharpley, A. S. Taussig and C. G. Hickey. Dr. Taussig made a motion that the directors arrange for a meeting in the near future for the discussion of the plans suggested by Dr. Kennedy. The motion was carried.

Miss E. Pelton, secretary of the Denver Anti-tuberculosis Society, who was present in the interest of the National Association for the study and Prevention of Tuberculosis, made a plea for that society and its work, in order to obtain an increase in its membership either from the physicians or their friends. She also asked for memberships in the Denver Anti-tuberculosis Society.

The Polygraph.

"The Polygraph: Its Uses and Limitations" was next given by Dr. A. S. Taussig. He made an interesting demonstration of the different irregularities of the heart beat and how they can be diagnosed without the aid of the polygraph which is difficult of operation and hard to keep in order. It had its use in calling attention to these irregularities of the heart beat and their causes. This use is now past. The instrument is expensive and takes a great deal of time. The doctor who has learned how to obtain the knowledge in other ways, can do just as well without it. Dr. T. R. Love discussed the polygraph and agreed with Dr. Taussig as to its use. After the meeting had adjourned Dr. Taussig demonstrated the use of the polygraph upon a patient.

MARY R. STRATTON,
Reporter.

The regular meeting of the Medical Society of the City and County of Denver was held March 19, 1918. President Moleen was in the chair.

Resolutions on the deaths of Dr. George F. Roehrig and Dr. John C. McGillivray were read and adopted.

Dr. O. M. Shere made a motion, which was carried, that a meeting of the society be called for

May 4, to hear Maj. Jump who will be in the city in the interests of the Medical Officers' Reserve Corps. (Date later changed to May 1st.)

A report of a case of diverticulum of the bladder was given by Dr. O. S. Fowler. His case was that of a man fifty-two years old in whom the diverticulum was in all probability due to back pressure from a prostatic enlargement. Dr. Fowler emphasized the necessity for the use of the cystoscope in these cases. The diagnosis is difficult in many cases and would be overlooked without the aid of the cystoscope. A picture of a small diverticulum which was difficult to find even with a cystoscope was shown by Dr. W. M. Spitzer. Dr. T. L. Howard then cited a case in his practice where a large diverticulum was difficult of detection.

Dr. G. M. Blickensderfer described a case of a boy ten years of age who had had symptoms simulating appendicitis, from whom a tape worm fourteen feet long was removed. Dr. C. F. Shollenberger then showed a specimen of a worm twenty-seven feet long which had been obtained from a girl ten years of age.

The Antivenereal Ordinance

The rest of the evening was given over to a symposium on the anti-venereal ordinance of Denver. Mr. James H. Pershing gave an address on "Its Relation to Medical Jurisprudence". He spoke of the new ordinance, which the city council had a right to pass, as a war measure with a commendable object. The placing in the hands of the health officer of the names and power to deal with them according to his judgment, makes the ordinance a government by men rather than by law and opens an avenue for misuse of the same. In his view, the doctor, in this ordinance, is facing a legal duty which is contrary to his ethical duty of confidence to the patient. To meet this complication the doctor should obtain the consent of the patient before reporting the disease. This may cause many reputable physicians to refuse such cases. Thus these cases may go to disreputable practitioners who will furnish their own medicine in order to avoid being detected in not reporting the disease. Owing to a state law in regard to privileged communications, Mr. Pershing thought the ordinance could not be enforced until we had a state law to the same effect. He suggested that an ordinance which would make venereal diseases reportable by number and not by name might be more practical.

The next address, which was in defense of the ordinance, was given by the City Attorney, J. A. Marsh, on "The Fight of the Municipality Against the Social Evil". He said that the ordinance was passed at the suggestion of the Federal Government and it was drafted only after a study of similar measures elsewhere. It is not as drastic as those found in Buffalo, N. Y., Des Moines, Ia., and some other places. In these places the venereal diseases are reportable by name without any assurance that the records will be kept private as they will be in Denver. As to the fact, suggested by Mr. Pershing, that enforcing the ordinance might cause separation in families and divorces, he thought it would be just as well, in the interest of clean and healthy posterity. He read a state law that had been passed since the one on privileged communications referred to by Mr. Pershing, which he considered would make it possible to enforce the ordinance.

"The Role of the State Board of Health in the Present Venereal Campaign" was given by Dr. C. G. Hickey. He stated that the State Board of Health was going to provide a laboratory for the detection of these diseases.

The State Board has also started a campaign of education. A large number of pamphlets have been ordered from the Council of National Defense for distribution. Also some pamphlets, prepared by the Bureau of Venereal Diseases, for the physicians to hand to their patients.

Dr. T. L. Howard spoke on "The Attitude of the Patients to the New Ordinance." He took the stand that if patients thought they were going to be reported they would give fictitious names, go elsewhere. He suggested as a possibility that the records might fall into unscrupulous hands and be a source of blackmail and divorce proceedings; if so, the blame would fall on the doctor.

Dr. H. G. Harvey spoke on "The Attitude of the Practitioner to the New Ordinance". He thought that education and enlightenment were to be depended upon rather than laws.

Dr. J. B. Davis thought that clinic cases, prostitutes and cases of bravado should be reported and quarantined but private cases should not be reported.

Dr. W. H. Sharpley did not see why poor people and women prostitutes should be treated differently from others. He stated that there were more men prostitutes than women and that all cases should be reported.

There were several others who spoke shortly upon the subject. The meeting then closed with a rising vote of thanks to the members of the legal profession who so kindly assisted with the evening's program.

MARY R. STRATTON,
Reporter.

COLORADO OPHTHALMOLOGICAL SOCIETY.

The regular monthly meeting of the **Colorado Ophthalmological Society** was held January 19, 1918, Dr. Melville Black presiding.

Dr. E. T. Boyd presented four cases: one of unusual cataract; one of punctate keratitis; one of corneal abscess; and one of iritis with synechia. Dr. Boyd's cases were discussed by Drs. E. Jackson, M. Black, H. M. Thompson, D. H. Coover, and W. H. Crisp.

Dr. H. R. Stilwill presented two cases: one of fibroma of orbit and one of scleritis. Dr. Stilwill's second case was discussed by Drs. W. H. Crisp, C. E. Walker, G. F. Libby, J. A. McCaw, E. E. McKeown and M. Black.

Dr. M. Black presented a case of tuberculosis of uvea. Dr. Black's case was discussed by Drs. E. Jackson, C. E. Walker, and H. M. Thompson.

Dr. F. R. Spencer presented a case of iritis due to tooth abscess. He also made a supplementary report on a case of steel in orbit. Dr. Spencer's cases were discussed by Drs. W. C. Bane, W. H. Crisp, J. A. McCaw, C. E. Walker, W. F. Matson, C. A. Ringle, E. Jackson, D. H. Coover, M. Black, E. T. Boyd, D. G. Monaghan, and D. A. Strickler.

Dr. W. H. Crisp reported two cases: one of malingering and one of bilateral abscess of caruncle. Dr. Crisp's cases were discussed by Drs. W. F. Matson and C. E. Walker.

Dr. H. M. Thompson reported a case of circumscribed tuberculous retinochoroiditis. Dr. Thompson's case was discussed by Dr. E. Jackson.

Dr. D. H. Coover made a supplementary report on a case of fibroma.

For a detailed report of the transactions, see the *American Journal of Ophthalmology*.

FRANK R. SPENCER,
Secretary.

COLORADO OPHTHALMOLOGICAL SOCIETY.

The regular monthly meeting of the **Colorado Ophthalmological Society** was held in Denver, February 16, 1918, Dr. H. R. Stilwill presiding.

Dr. C. E. Walker presented one patient showing the result following four pterygium operations. This case was discussed by Drs. Melville Black, G. F. Libby, W. H. Crisp, and J. A. McCaw.

Dr. J. A. McCaw presented a case of ophthalmia nodosa. Dr. McCaw's case was discussed by Drs. Edward Jackson, Melville Black, and W. H. Crisp.

Dr. D. H. Coover presented a case of postoperative congenital ptosis. This case was discussed by Drs. Melville Black and C. E. Walker.

Dr. Wm. C. Bane presented three cases: one of postoperative result following extraction of steel from vitreous; one of corneal ulcer; and one of superficial corneal haze. Dr. Bane's cases were discussed by Drs. Melville Black, C. E. Walker, and F. R. Spencer.

Dr. H. R. Stilwill presented a case of scleral tuberculosis. This case was discussed by Drs. J. A. Patterson, C. E. Walker, W. H. Crisp, and Melville Black.

Dr. Melville Black made a supplementary report upon a case of uveal tuberculosis and the case was discussed by Dr. C. E. Walker.

For a detailed report of the transactions, see the *American Journal of Ophthalmology*.

FRANK R. SPENCER,
Secretary.

Book Reviews

Diseases of the Digestive Organs. By Charles D. Aaron, Sc.D., M.D., Professor of Gastroenterology in the Detroit College of Medicine and Surgery; Consulting Gastroenterologist to Harper Hospital. Second edition, thoroughly revised, cloth, price \$7.00, pages 818; illustrated with 156 engravings, 48 roentgenograms and 9 colored plates. Philadelphia and New York; Lea and Febiger; 1918.

The second edition of this standard work appears enlarged and greatly improved in form, having been subjected to a careful and thorough revision. A number of chapters have been rewritten and three chapters have been added. The additions of this edition include most notably a chapter on the examinations of the duodenal contents and the employment of the duodenal tube for duodenal lavage and for removing the duodenal contents at will, thus aiding both diagnosis and treatment. Another chapter deals with chronic intestinal toxemia and chronic intestinal stasis, and their medical and surgical treatment.

This book is intended not only as an aid to the specialist in diseases of the digestive organs, but also as a reference work for the busy general practitioner. The author has brought the subject of gastroenterology up to date, eliminating abstract theories and aiming to present the practical, the trustworthy and the helpful. The weaker chapters in the book are those on "Medication in Gastric and Intestinal Diseases" which give the impression of being fragmentary and incomplete. There are also a few noticeable errors in typography.

An especially excellent chapter in this work is that on the methods of examining the feces. With the diagnostic technic now available for the examination of the feces, we can identify the origin, formerly obscure, of many disturbances of the

stomach and intestines. The diagnostician is now able to detect the more minute disturbances of absorption, secretion and motility, so that rational treatment may be instituted. The test diet stool findings in each one of the diseases of the digestive organs are fully explained in due order. Another chapter that is excellent is that devoted to roentgenography, which is enriched with copious illustrations of the more important conditions that may be encountered. Dietetic treatment and the principles and details of massage and hydrotherapy are dealt with in an acceptable manner. The subjects of chronic constipation and duodenal ulcer are considered at length, because of their importance.

Space has been devoted to many tests and reactions for the diagnosis of carcinoma, such as the Wolff-Junghaus, Abderhalden, Gluzinski, Saloman, tryptophan and others. The formol index is not considered, though of equal importance with others described.

It is a pleasure to commend this book.

J. L. M.

A Practical Text-Book of Infection, Immunity and Specific Therapy with special reference to immunologic technic. By John A. Kolmer, M.D., Dr. P.H., M.Sc., Assistant Professor of Experimental Pathology, University of Pennsylvania, with an introduction by Allen J. Smith, M.D., Professor of Pathology, University of Pennsylvania. Second edition thoroughly revised. Octavo of 978 pages with 147 original illustrations, 46 in colors. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$7.00 net. Half Morocco, \$8.50.

The subject matter of Kolmer's massive yet attractive text-book is arranged in five parts and thirty-two chapters. Part I, devoted to general immunologic technic, will be utilized chiefly by special laboratory workers, and is rich in practical detail. Part II, upon the principles of infection, gives a clear and readable account of the most modern views concerning the causes and course of infection, and the nature of toxins, ageressins, ptomains, etc. Part III, comprising the major portion of the text, is concerned with the principles of immunity and special immunologic technic, and is of equal utility to the general practitioner and the specialist in immunology. A special chapter is descriptive of venom hemolysis, particularly the cobra venom test for syphilis. Another and longer chapter is devoted to the technic of complement-fixation reactions, including the Wassermann syphilis reaction in its four main methods and nine modifications. Most interesting are the chapters upon anaphylaxis, with their revelations regarding the curious manifestations of "idiosyncrasies," serum disease, tuberculin reactions and other sensitizing processes. In Part IV the author considers applied immunity in the prophylaxis, diagnosis and treatment of disease; that is, specific therapy with vaccines, serums and synthetic chemic products, especially salvarsan and neosalvarsan. He regards autogenous vaccines as much superior to the stock ones, except perhaps in gonorrheal and tuberculous infections. His directions as to the administration of all these remedies are definite and easily accessible by way of a good index. Part V, devoted to experimental infection and immunity, is made up of laboratory steps and questions about sixty experiments, admirably designed to furnish medical students with a first-hand acquaintance with immunologic principles and practice. Professor Kolmer is to be congratulated upon the literary and scientific merits of this volume, and

the publishers are to be commended for the typographic excellence of the work, and particularly for its instructive variety of colored illustrations.

E. C. H.

Medical War Manual Number 2: Notes for Army Medical Officers. By Lt.-Col. T. H. Goodwin, R.A.M.C. With an introductory note by Surgeon-General William C. Gorgas, U. S. A. Illustrated. 1917. Lea and Febiger, Philadelphia and New York. Price, \$1.00.

This manual is the outcome of a series of lectures delivered at the army medical school by the distinguished author, Lt.-Col. Goodwin, and is based upon his long practical experience at the front. It contains the most important information needed by the medical man who expects to enter the army service. The author gets down to business at once and in the shortest possible way outlines the organization and administration of the medical service and method of going for and disposing of the wounded, from the first aid stations through to the base hospital ships and convalescent stations or return to the front. A chapter is devoted to war surgery methods and their results in the present war, and the last chapter to sanitation and hygiene.

The book is well bound and is of convenient pocket size.

H. S. S.

Medical War Manual No. 4, Military Orthopaedic Surgery, prepared by The Orthopaedic Surgery Council. Illustrated. Lea and Febiger, Philadelphia and New York, 1918. Price \$1.50.

This manual is uniform in size with those previously published on military medical subjects, is bound in flexible leather and of a size which permits of its being conveniently carried in the coat pocket. The first three chapters consider the human foot, its anatomy, physiology and disabilities, with the prophylaxis and treatment of them, and give a clear and concise description of the common foot troubles, especially as seen in army service. Several of the succeeding chapters are taken from "Notes on Military Orthopedics" and "Injuries to Joints," written by Col. Sir Robert Jones, and are well worth reading. Ununited and malunited fractures and their treatment by bonegraft surgery are quite fully considered. Three chapters are given to the methods of fixation, splints and other apparatus used in applying orthopedic principles to war surgery.

H. W. W.

Materia Medica, Pharmacology, Therapeutics and Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph.G., M.D., Assistant Professor of Clinical Medicine Columbia University. Second Edition, Reset. Octavo of 654 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$4.00 net.

This book begins with the adage, "Medicine sometimes cures, it often relieves, it always consoles". Throughout its entirety the work adheres to clear concise teaching in accord with the adage. The text is very aptly illustrated and the typography is excellent. Anyone who is searching for a study of Materia Medica, Pharmacology and Therapeutics will read this book with much pleasure and profit. The author has the faculty of stating things in such a simple and brief way as to make them readily appreciated.

The chapter discussing digitalis is dealt with admirably. The subject of tobacco is particularly interesting; the author states: "The cigar is less rapidly consumed than the cigarette, and its area

of ignition is greater, so that the tobacco just in advance of the area of combustion gets hot; consequently there is some volatilization of the raw nicotine, and this is drawn in with the smoke. This is not so much as in the pipe but the fatter the cigar, the greater will be the volatilization, and therefore the less destruction of the nicotine. Hence the smoke of a thin cigar, and still more so that of a cigarette, will contain less of the raw volatile poisons than that of a thick cigar. As a matter of fact the cigarette fiend does not consume any more tobacco than the cigar or pipe fiend, for ten average cigars represent the tobacco of fifty or sixty cigarettes, and, as we have seen, the cigarette is the least harmful form of tobacco."

In the reviewer's opinion the final part on Prescription Writing deserves special mention, this subject being simplified and handled in a masterly way. The work of Bastedo is highly commendable and the book is a valuable addition to modern medicine.

H. C. L.

American Illustrated Medical Dictionary (Dorland). A new and complete Dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology and kindred branches; with new and elaborate tables. Ninth Edition Revised and Enlarged. Edited by W. A. Newman Dorland, M.D. Large octavo of 1179 pages with 331 illustrations, 119 in colors. Containing over 2,000 new terms. Philadelphia and London: W. B. Saunders Company, 1917. Flexible leather, \$5.00 net; thumb index, \$5.50 net.

The new Dorland goes much further than a simple dictionary. It furnishes many good tables, colored plates, biographies of famous men in medicine, chemical formulas, methods of treatment, laboratory methods, short descriptions of technic for many operations, etc.

The book is flexible, the paper thin and strong, the typing plain though small. Pronunciation, etymology and definitions are given with special care and exactness. Over two thousand new words are said to have been added in this edition.

F. B. S.

A Pocket Formulary, by E. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia, 1918. Eleventh Edition, Revised. Published by Lea and Febiger, Philadelphia and New York.

This is a small flexible backed book offering prescriptions for most ailments, from abrasions to yellow fever. It is arranged under headings of diseases and symptoms, alphabetically interwoven. There does not appear in this book the over-load of out-of-date material that we are accustomed to see in pocket formularies, although much of the old that is good has been retained. Newer prescriptions include the various sera, vaccines, paraffine for burns, and "Oleum Dakini" for wounds. It is a very complete pocket-sized formulary, high grade in character.

F. B. S.

Dedication of Warden McLean Auditorium at Camp Greenleaf, Ga. Dedication of the Warden McLean Auditorium at Camp Greenleaf, the military medical school at Camp Chickamauga, Ga., on March 11th was attended by the Surgeon General of the Army and members of his staff, as well as many distinguished medical men from military and civil life, and by about 1,000 doctors who as medical reserve officers are taking the three months' course.

Surgeon General Gorgas said that on a visit to England five years ago he learned that the great developments in the English system had been forced by the necessities arising during the Boer War; so, he said, the United States military medical service was being developed by the exigencies now confronting us and would continue after the war.

Dr. William H. Welch gave figures as to the status of medical enlistment in the Army and Navy. Men enrolled in the Medical Officers' Reserve Corps, and recommended to the Adjutant-General's office totalled 21,824, of whom 17,313 had accepted their commissions. Of 5,378 recommended in the Dental Reserve Corps, 5,086 had accepted. Of 1,067 recommended in the Sanitary Corps, 865 have accepted. Of 152 recommended in the Ambulance Service, 138 have accepted. There were 844 officers in the Naval Medical Corps and 103 in the Naval Dental Corps. There were 827 medical and 199 dental officers enrolled in the Naval Reserve Force. There are available in the Naval Medical Reserve Corps, retired officers, acting assistant surgeons and national naval volunteers, naval militia and coast guard, 284 men. The total of officers available for active naval service was 2,257.

General Blue requested publicity for the fact that the U. S. Public Health Service is greatly in need of the services of competent sanitarians, particularly medical officers, sanitary engineers and scientific assistants at salaries varying from \$1,800 to \$2,500 per annum.

Dr. William D. Haggard, of Vanderbilt University, read a statement for the Red Cross which showed that there were twenty base hospitals on active duty abroad and fourteen others mobilized of nineteen certified as ready for immediate service.

Major William F. Snow, reviewing the work of the Committee for Civilian Co-operation in Combating Venereal Diseases, said that military medical advisers had been provided for state boards of health, municipal clinics were being placed, and an excellent moving picture film, "Fit to Fight", had been prepared to be shown at the camps as an educational measure.

For the Committee on Surgery, Dr. Charles H. Mayo told how data on 21,000 physicians had been gathered and placed on cards convenient for the ready selection of individuals and groups suited for any given task, a duplicate set of these cards having been prepared for the use of the Surgeon General's office in France.

Miss Ella Phillips Crandall, Secretary, reported for the Committee on Nursing. The total number of nurses enrolled to date was 18,344, of whom 10,000 had enrolled with the Red Cross since April 6, 1917. The Red Cross had supplied the Army with 6,220 up to March 1, and 1,000 to the Navy and Public Health Service. As insufficiency of nurses in December was due in some camps to lack of housing accommodations, and in others to the fact that a larger quota had not been called for, the Committee recommended to the Surgeon Generals of the Army and Navy that suitable accommodations be provided in adjacent towns where necessary; that there should be a quota of not less than one nurse to six acutely ill men; that a reserve of twenty-five above the prescribed quota should be stationed at each hospital; that Miss Anne W. Goodrich be assigned to inspect military and naval hospitals, and that superintendents of three-year training schools graduate the 1918 classes early. These recommendations received unanimous endorsement of the Executive Committee of the General Med-

ical Board, the Surgeons General and the Secretary of war, and since that time all demands for nurses have been met.

Lieutenant-Colonel Victor C. Vaughan, reporting for the Committee on Legislation, read a letter from President Wilson to Dr. Franklin Martin, endorsing the Owen-Dyer bill providing for higher rank and greater authority being accorded members of the Medical Corps of the Army and stating that he had written letters to the chairmen of the Military Committees of the House and Senate expressing the hope that the bill and resolution might be passed.

The \$10,000 auditorium was formally presented on behalf of Mrs. Wm. McLean, whose son, Warden McLean, was accidentally killed while in the officers' training camp at Fort Oglethorpe. Colonel Henry Page, who, since his graduation from the University of Pennsylvania School of Medicine in 1894, has been continuously in the regular army and whose efforts have transformed the site of the Chickamauga Camp, made the speech of acceptance, and said it was his ambition to have here a great postgraduate training camp, and that he hoped to see the temporary buildings replaced by permanent structures. The Warden McLean auditorium building is situated in the center of Camp Greenleaf. Besides the main assembly hall there are several smaller rooms, including orthopedic museum, library and reference room, lecture rooms, study rooms and office. Since the opening of the camp 4,000 officers and 20,000 enlisted men have been trained and sent to duty abroad or to instruct at other camps.

New Appeal to Physicians to Enroll for War Service. Dr. Franklin Martin, chairman of the General Medical Board of the Council of National Defense, has issued the following statement:

Increase in the number of calls to active duty of the members in the Medical Reserve Corps indicates need of enrolling physicians as new members, and the General Medical Board of the Council of National Defense is co-operating with the Surgeon General's Office in sending a new appeal to the medical profession.

There were (March 1) 144,869 physicians in the forty-eight States and District of Columbia. The Surgeon General's report for March 22 gives a total of 18,138 officers in the Medical Reserve Corps, and of these 14,911 are on active duty. Weekly reports indicate that the officers are being called to active duty in greater numbers than they are being admitted to the Reserve Corps.

22,309 Recommended.

When the declaration of war demonstrated that there would be great need for physicians, the General Medical Board of the Council of National Defense began to secure data regarding physicians throughout the country. In all, 22,309 doctors have been recommended by the Surgeon General to the Adjutant General's Office for commissions in the Medical Reserve Corps—fifteen per cent of the doctors of the country.

In addition to the members of the Medical Reserve Corps who are called to active duty, others for various reasons—illness, accident, or other unforeseen contingency—are obliged to leave the service. So the margin is constantly being drawn upon, and the need of new members is indicated as the Surgeon General and the Council of National Defense are desirous of having a safe margin maintained at all times.

Should Not Relinquish Practice.

Physicians who enroll are advised and urged not to relinquish their practice until informed by the Surgeon General's Office that they are soon

to be called to active service. It has been the policy of the Surgeon General's Office to allow fifteen days, in order that a physician may adjust his affairs, between the time that he receives his orders and the date on which he will be expected to report.

In order to acquaint the medical profession with the great need of physicians and surgeons for work in connection with the war representatives are being sent to various parts of the country, and will continue to be sent as needed. These representatives are addressing meetings of the doctors called by their State committees, who are co-operating with Washington. (The Official Bulletin, April 2, 1918.)

To Probe Toxicity of Arsphenamine. In view of the reports in current medical literature of untoward results from the use of arsphenamine and neo-arsphenamine, the Director of the Hygienic Laboratory of the U. S. Public Health Service requests that samples of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination. In sending these samples it should be ascertained that the lot number is the same as that of the ampoules used on patients. The samples sent should, if possible, be accompanied by a brief note stating the approximate body weight and age of the patient, the dose and dilution of the drug given, the symptoms and result; that is, whether fatal or not.

CONSERVATION OF SUGAR, ALCOHOL, AND GLYCERIN IN PRESCRIBING.

We have received from the United States Food Administration the following letter:

March 18, 1918.

Colorado Medicine,
Denver, Colorado.

Gentlemen:—As you are aware there is urgent need for the country to use with the utmost care, our stocks of sugar, alcohol and glycerin. It has come to our attention through the work of Professor Wimmer of New York and Mr. F. A. Upsher Smith of St. Paul, Minn., that it is possible to reduce largely the amount of these materials used in medicines by the adoption of infusions, decoctions and solid forms of medication, such as capsules, in place of elixirs, syrups, fluid extracts and tinctures.

As the choice of medicine rests with the physician we feel that the extent to which this conservation program is successful rests largely with the physician and we urge upon physicians throughout the country the desirability of prescribing extemporaneously wherever possible.

It is really desirable that the editors of Pharmaceutical and Medical journals, Deans and Professors of Colleges, and Secretaries of State, County and City Associations should see that the matter is fully discussed at meetings of physicians and druggists and should do all within their power to assist this conservation movement, which cannot fail to be of material assistance to the country since "Food Will Win the War."

May we depend upon you for your active cooperation in this matter?

Yours very truly,

United States Food Administration,
Per CHARLES W. MERRILL,
Division of Chemicals, Sisal and Jute.

Colorado Medicine

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Editorial Comment

THE ECLIPSE OF THE SUN.

On June eighth the path of the total solar eclipse will pass across Colorado from near the northwest corner over Denver and southeastwardly including parts of thirteen counties. In every part of the state, the incomplete obscuration of the sun will be a striking phenomenon that will arrest attention and excite interest. Every person in the state will watch it more or less; and in the process a large number of eyes are likely to be damaged, some of them permanently.

When the eclipse of the sun occurred in northern Europe in nineteen twelve it was estimated that thirty-five hundred cases of eclipse blinding occurred in Germany alone, while cases were reported from Switzerland to Norway and from Spain to Russia. In most of these the effects lasted only a few weeks; but in a certain proportion the impairment of vision was permanent. As this form of damage to sight always affects the most sensitive and useful part of the retina, and as it can always be prevented by proper care, it is worthy of a good deal of effort on the part of the medical profession to spread the knowledge of the danger of such injury, and of the means that may be taken to prevent it.

The wide adaptability of the eye which enables it to maintain useful vision under enormously varied degrees of illumination depends on the function of the retina known as light and dark adaptation. In darkness the retina becomes highly sensitized to light, so that objects are perceived under an illum-

ination that would require hours for the taking of an ordinary photograph. On the other hand, the retina can so adapt itself to light that it gets its highest visual acuity by light that yields a good photograph in a small fraction of a second.

But this process of adaptation to light has its limits. There comes a point where increase in the light does not increase the acuteness of vision. Beyond that, increased intensity of the light brings diminished visual acuity, and then danger of permanent injury to the retina. The after images noticed after looking at any brightly lighted object are the beginning of this retinal impairment. As the illumination is increased or the exposure to it protracted, the more persistent do these after-images become, until prolonged gazing directly at the sun produces most disastrous effects.

It is possible to glance at the sun for an instant without danger of serious harm to the retina. Under ordinary circumstances this is all that we do. Even without artificial shading, the prominence of the brow and lashes protects the eye from direct sunlight most of the time. The savage who has neither visor nor hat rim to shade his eyes protects them from the sun with his hand when he wishes to look steadily up or off, so that the direct sunlight might fall continuously on one point of his retina.

An occurrence like a solar eclipse offers a strong inducement to look toward the sun again and yet again. The first look leaves an after-image, during the persistence of which other objects seem less distinct, but the sun can be looked at with less disagreeable sensation of dazzling. If, during this period, it is again looked at, a still stronger, more persistent after-image is developed, al-

lowing the eye to turn again to the sun with still less of discomfort and more satisfactory vision of the sun itself. Repeating this process, the experimenter soon finds he can look quite steadily at the sun, and "not feel it much", and then very soon the damage is done.

On looking away again, a persistent after-image is noted, which blots out any object looked at; and this inability to see the object on which attention is fixed continues from half an hour to a lifetime, according to the damage done by the exposure. Along with the scotoma that causes inability to see the object looked at, other symptoms are noted. A partial clouding, with constant quivering of everything looked at, is extremely annoying. The distortion of lines or objects looked at is an unfavorable symptom as regards recovery. The prognosis is also unfavorable when much time elapses before improvement begins.

The most important thing to do for eclipse blinding is to prevent it by warning the community of the danger and of the means of preventing it. It can be prevented only by looking at the sun through something that will greatly reduce its luminosity and not through any ordinary dark glasses. In one series of over four hundred cases, fourteen per cent of the patients had looked at the sun through some kind of dark glasses. These should not be trusted. The most effective safeguard is the use of the old-fashioned smoked glass. If this is well covered with soot, and does not get scratched off in places, one can view the sun through it. But a still better, more cleanly, and safer thing to hold before the eye is a bit of photographic film that has been over-exposed and then developed. The dense part of a photographic negative representing the sky may serve. But whatever is to be used should be carefully tested beforehand.

Photographers and druggists could do a good stroke of business, and at the same time help protect the public from this danger, by laying in beforehand and advertising a stock of properly prepared film. Before the date for its occurrence every local newspaper near the path of the total eclipse

should publish some account of the dangers of eclipse blinding and of the way to avoid it.

Such cases as do occur should be carefully studied, with reference to the scotoma, the ophthalmoscopic appearances of the retina, and the duration of the symptoms, as well as the exact circumstances and phase of the eclipse under which the scotoma first appeared. If much is to be done to prevent eclipse blinding, the medical profession must at once take the lead in an extensive campaign of education. E. J.

THE APPEAL FOR PHYSICIANS.

Many of the readers of Colorado Medicine availed themselves of the opportunity to listen in person to the explanation given by Major Harry D. Jump of the call for a large increase in the Medical Reserve Corps of the United States Army. There were, however, many others who for various reasons did not succeed in attending the meetings addressed by Dr. Jump in Denver, Colorado Springs, and Pueblo successively.

Major Jump is not of the type of men for whom personal compliments possess great value. It is however entirely proper to remark that his oratory is of the order which begins and finishes without pretension or apparent artifice, but yet by its simple eloquence and forcefulness goes straighter to the hearts and minds of his listeners than that of the rhetorician who overburdens his discourse with tricks and gestures and flowery language.

Major Jump told us that there had been offered for commission twenty-one thousand men, by nearly nineteen thousand of whom commissions had been accepted. So rapid has been the draft upon this supply, that only three thousand physicians still remain in the reserve, sixteen thousand having already been called into active service. Since not more than fifteen hundred of these remaining three thousand can be called to duty, it will be seen that an extremely narrow margin is left to work upon. In one week before Major Jump left Washington for his recent tour there were called into active service one hundred and

fifty more men than were taken in within the same period, and one hundred more were discharged from the service, leaving for that particular week a net loss of two hundred and fifty physicians.

There is an overwhelming need for surgeons. It was possible to squeeze only fifty-six hundred men for surgery out of a total list of sixteen thousand. A base hospital unit calls for twenty-one surgeons out of a personnel of thirty-two physicians. According to the British experience, at least thirty per cent of all the men injured are orthopedic cases. Preparations are now being made to take care of fifty thousand wounded men to be returned from Europe to this country before cold weather, although only the irretrievably wounded men will be sent back to the United States during the war.

Major Jump emphasized the wonderful opportunities for training afforded by the special courses of preparation in individual branches of medicine and surgery, such as orthopedics, surgery of the head, and the x-ray localization of foreign bodies. Very many x-ray men are required, and the government is planning to take a large number of young physicians who have recently completed their hospital service, and to train them specially for this work. The greatest postgraduate medical school in the country is being conducted at Fort Oglethorpe.

England has furnished fifteen thousand out of a total of twenty-five thousand physicians. In France every medical man is subject to military orders, although some of course are kept at home under this system for the care of the civilian community. The United States government is now aiming to provide at the rate of ten thousand physicians for one million soldiers. If we furnish as many fighting men in proportion as England has done, says Major Jump, we shall have to provide eight million; and who can tell how many men we must provide? We must remember, he continued, that the Allies have won no decisive victory since the battle of the Marne, and that the honors of war are with our enemy. The burden of the victory against Germany rests upon the armies of the United States;

and the burden of the care of the wounded men rests upon the physicians of this country. Something has been said about the quota of physicians which Colorado should furnish. There is, declared Major Jump, no quota for Colorado. The government wants every available man from this state.

HOW OLD ARE PHYSICIANS?

During international strife, even more than in the piping times of peace, the physician and his service stand in a special class. In drafting the combatant forces the government has limited itself to men between the ages of twenty-one and thirty-one years. It accepts volunteers to a somewhat greater age. But for the physician the age limit is raised to fifty-five years. There are special reasons for this. One is of course that the number of physicians required for military service in time of war is greatly beyond the proportion of medical men to the civil population. Another is that, whereas a soldier may be made by six months' training, the average time required to prepare a physician for practice may conveniently be estimated as from five to seven years, according to whether or not we include the two preparatory years of college study. The third reason, partly bound up with the second, is that most physicians have not reached their greatest possibility for usefulness until they approach middle life.

In daily conversations with regard to service in the Medical Reserve Corps one frequently hears debated the bearing of the age of the individual upon his responsibility for army service. Some interest would therefore seem to attach to figures concerning the age of physicians. As a simple criterion probably applicable in the main to much wider areas, a statistical study was made of the ages of the six hundred and forty-four physicians of known age listed for the city of Denver in the American Medical Association directory for 1916. Assuming that each physician's age is at the present moment exactly what it would be on his birthday in 1918, the following figures are arrived at: Only nine are under thirty years of age. Twenty-five are between seventy and seven-

ty-five years. The average age of the six hundred and forty-four physicians is approximately fifty-one years. By decades, the largest number are between fifty and sixty years of age, namely two hundred and six. The next largest number falls between forty and fifty years, namely one hundred and eighty-two; the next between sixty and seventy, namely one hundred and nineteen; and the next between thirty and forty, namely one hundred and three. It is interesting to reflect that the average is undoubtedly materially increased by the marked reduction in the number of students graduated from the medical colleges of this country in recent years, and also of course by the lengthened requirement for preliminary education which has itself been a factor in diminishing the number of medical graduates.

PRIMARY SUTURE OF WOUNDS.

It is doubtful whether any war has presented a grouping of conditions so favorable to sepsis in wounds as has existed for three and a half years along the western battle line. The measures at first favored for combating the prevalence of spreading gangrene were on the one hand the use of strong antiseptics, and on the other hand the open treatment of contaminated wounds. The use of strong antiseptics was disappointing, since bacterial multiplication occurred in spite of the most radical applications in the earliest stages of infection. The objections to the open method, in which the wounds were left to granulate without any attempt at suture, are obvious.

In a recent address before the Royal Society of Medicine, Sir Anthony Bowlby, consulting surgeon to the British armies in France (British Medical Journal, March 23, 1918), described the steps by which this important problem as to the best method of combating the all-prevailing sepsis has gradually and in large degree been solved by the surgeons of the British and French armies. It was realized that the source of danger in the presence of gross infection was to be found in dead or damaged tissues contaminated by the soil of French fields, and in

buried fragments of dirty clothing or of projectiles. It was learned especially that the bacteria of "gas gangrene" thrived principally on the muscle fibers which had been crushed by the missiles. As time went on more and more attention was paid to the complete removal of whatever tissue seemed capable of nourishing infection. "Today we know" says Bowlby "that the one and most necessary method of treatment is the careful and thorough mechanical cleansing of the wound and the complete removal of all dead or partially devitalized tissue. Without this antiseptics are useless. . . ."

The early experience of the army surgeons was that the cases whose progress was least satisfactory were those whose wounds had been completely sutured, so that for a long time this treatment was abandoned. Curiously enough, the first part of the body in regard to which primary suture was revived was the knee joint; it being discovered that many perforating wounds of joints did well, even in the presence of infection of the synovial fluid, provided they were not opened up and drained. Cautiously, and as indicated by the exigencies of the special areas, the method of closure, after thorough surgical cleansing, was extended to wounds of the brain and fractures of the skull, to wounds of the abdomen and of its contents, and to wounds of the lungs. In the last class of cases, it was found that success depended upon immediate closure of the pleural cavity after operation, fortified by suture of the skin after removal of damaged muscle and rib splinters.

When it came to applying primary suture to wounds of the limbs, the thorough cleansing necessary was rendered much more difficult by large infected masses of devitalized muscle, by the impossibility of excising large vessels and nerves exposed in a wound, and frequently also by extensive fracture and comminution of dirty bone. Many failures were incurred by a natural unwillingness to cut out enough of the damaged muscle.

The Surgical Conference of the Allies in May, 1917, agreed that operation "may be followed in some instances by primary closure of the wound, notably in the case of

wounded joints". During the succeeding six months a number of surgeons of both British and French units, working in hospitals which were favorably situated for following the progress of wounds from their earliest condition to the end of their surgical course, put the method of primary suture to a thorough test in large series of patients. Although ninety-eight per cent of the patients admitted to the British unit had wounds of the very severe type due to injury by shells or bombs, in sixty-seven per cent of a total of four hundred and thirty-three patients the wounds healed by first intention, while in many other cases healing took place with only a slight superficial supuration. The French surgeons had equally good results. The British unit used no antiseptics, whereas in the French unit ether was almost always employed for this purpose.

The most dangerous bacterial foe to the success of primary suture proved to be the streptococcus, especially of the hemolytic variety. All the cases infected by hemolytic streptococci showed such clear indication of infection within twenty-four hours that it became evident that the wounds should be opened up, the skin edges being red, swollen and indurated, and a copious exudation oozing from between the stitches. The choice of suitable cases for suture demands, says Bowlby, a considerable experience of wounds at the front, about one-half of the cases recently admitted to the "Observation Casualty Clearing Station" being for various reasons unsuitable. At the Allies' Surgical Conference in November, 1917, the French surgeon Duval reported that of the "lightly wounded" cases without fractures eighty per cent had been successfully sutured within eight to twelve hours of injury. At this same meeting it was agreed that the disinfection of wounds had passed from the domain of the chemist to that of the surgeon; and that primary suture had taken the place of secondary suture and had become the method of choice.

As factors, in addition to those already mentioned, important for success in primary suture, Bowlby mentions complete asepsis, rest for the patient for not less than a week

after suture, operation as soon as possible after injury, and care to avoid the immediate closure of wounds presenting any suspicion of the presence of gas bacillus, such as inflammation and induration of the wound edges, or definite gas gangrene. It is never right or necessary to remove more than a very thin edge of skin.

MEDICAL EDUCATION IN THE UNITED STATES.

It has been rather freely stated that many applicants for commission in the Medical Reserve Corps of the United States Army have been rejected on account of professional unfitness for the service. This is an unpleasant reminder that only a few years ago the average standard of requirements for medical students and medical graduates in this country was the lowest among the great civilized nations of the world. So generally creditable is our present position in this matter that it is hard for many of us to realize that it is only fourteen years since the Council on Medical Education of the American Medical Association inaugurated its campaign for raising the standards of medical education in the United States. We had more medical schools than all other countries of the world together; and a very large proportion of our medical schools depended for their existence upon the fees paid by students, while some of the schools annually divided among their teachers profits derived from such fees.

Although exact information is not obtainable, Colwell*, secretary of the Council on Medical Education, seriously doubts whether more than twenty or twenty-five per cent of the medical schools of the United States in 1904 really insisted on a four year high school education as a preliminary to admission. At the present time seventy-nine out of the ninety-four medical colleges surviving in this country (reduced from one hundred and sixty since 1904) require two or more years of preliminary college work before the student enters upon his medical course proper. Two years ago it was esti-

*American Medical Association Bulletin, Educational number, 1918.

mated that the medical schools of the United States spent on an average for the training of each student nearly three times as much as was paid by the student in tuition fees. Whereas in 1904 very few of the medical schools had any full-time salaried teachers in the laboratory branches, the average number of such teachers in each college of the country was recently fourteen, over seventy per cent of the schools having from six to forty or more full-time teachers. The hospital relationships and the clinical teaching facilities have in the same time shown a tremendous improvement.

In discussing the reasons for maintaining lofty standards in the selection of students for admission to medical schools, Chambers* points out that the very highest type of intellectual ability is called for in the exercise of the physician's art. He should be a man of broad education and outlook, because in many instances he is likely to stand among the most prominent and influential members of his community. For somewhat the same reasons as apply to the clergy, his training should include much more than a mere specific acquaintance with the technical subjects directly included in his medical course or leading up to it. The advisability of broadening the scope of his medical thought establishes the value of acquaintance with at least one important foreign language. The advancement of medical science, as well as the importance of the physician's general relationship with the rest of the community, renders it extremely desirable that he should command a much greater facility and accuracy in the use of the English language than is, unfortunately, the possession of the average medical man in this country today. It is to be hoped that no arguments based upon the exigencies of the present war will result in turning back American medical education from the reforms which had been so nearly completed before this country was drawn into the world struggle.

It is sometimes argued that while the medical profession is constantly organizing a rapid elevation of its own standards of education, and in this way increasing the time

and expense required of those who seek admission to its ranks, the laxity of public opinion and legislation with regard to the practice of the so-called medical cults is opening wide the door to that very degradation of the healing art from which the medical idealist seeks to escape. To this Colwell very plausibly replies that the increased standards of medical education will themselves in large measure eventually solve the medical cult problem. In days gone by the difference in quality between some of the cult institutions and some of the lower grade medical colleges was not a wide one, and there were instances where physicians of the regular school were of even poorer mental equipment than some of the cult healers. With a persistence of higher standards of regular medical education, however, the gulf of separation between the irregular and the regular will become so broad that it must be recognized by any person of intelligence, and the manifest superiority of the well qualified physician will place him beyond the competition of his unscientific and heterodox rivals.

Original Articles

THE SURGICAL TREATMENT OF THE ANEMIAS.*

FROST C. BUCHEL, M.D., DENVER.

The anemias that are most successfully treated surgically are those that are associated with an enlarged spleen.

In diagnosing a chronic anemia the determination of the size of the spleen is important. Percussion has been proved to be misleading in outlining moderate enlargements of the spleen and palpation is of no avail unless the spleen is enlarged to three times its normal size. By following certain new technique the size of the spleen can be shown on an x-ray plate. This information is so important that an x-ray examination should be made as a routine in cases of chronic anemia.

The examination of the microscopic blood

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*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

picture does not give conclusive evidence in a blood dyscrasia. The typical pernicious anemia blood smear may be found occasionally in certain other blood disorders.

The Ribierre or the Chauffard and Widal tests for the fragility of erythrocytes in the peripheral circulation should be made as a routine. In pernicious anemia the red blood cells have an increased resistance in hypotonic salt solution. In hemolytic jaundice they show an increased fragility. The Ribierre test is not especially complicated and does not require greater care or accuracy than any other routine laboratory work.

Syphilis of the spleen may simulate any of the blood dyscrasias. The fragility test is not altered in syphilis, which fact serves as a valuable differential diagnostic sign from hemolytic jaundice and pernicious anemia.

Normally hemolysis begins at 0.44 per cent and is complete at 0.28 per cent. In a case of hemolytic jaundice reported by Elliott and Kanavel hemolysis began at 0.52 per cent and was complete at 0.36 per cent sodium-chlorid solution. In the daughter of this patient hemolysis began at 0.50 per cent and was complete at 0.38 per cent. This patient also had an enlarged spleen. Another laboratory test that should be made is the estimation of the blood derived pigments in the duodenum. In the hemolytic types of anemia there is an increase of urobilin. The hemoglobin molecule is split into two fractions in the spleen; hematin, the iron-containing fraction, is conserved in the liver, bone marrow and other parenchymatous organs; the pigment-containing fraction is excreted by the liver as bilirubin. The bilirubin is converted into urobilinogen in the intestine.

Schneider spent a year in the Von Noorden clinic working under Eppinger and has modified the method worked out there by Bondi. He makes a spectroscopic quantitative estimation of urobilin and urobilinogen found in the duodenal contents.

Von Jaksch's disease must be differentiated from rickets and syphilis. Anemia pseudoleukemica infantum occurs in infants under two and one-half years of age. The best opinion at the present time is that it is

a clinical entity. It is frequently associated with rickets but not necessarily so and there are many cases of rickets without splenomegaly. It is certainly very closely associated with the adult form of splenic anemia as it occurs in children.

In splenic anemia there is usually a history of hemorrhages. Hematemesis is so characteristic of splenic anemia that before jumping at the conclusion that peptic ulcer exists the question of its splenic origin should be very painstakingly investigated. In splenic anemia there is a low color index and no leucocytosis and a marked anemia. Late in splenic anemia one has Banti's syndrome, with cirrhosis of the liver and ascites. The course of splenic anemia is very suggestive of a splenic origin in certain other cirrhoses of the liver. It has been suggested that Hanot's cirrhosis of the liver is of splenic origin. The spleen appears to attract to itself certain toxic agents from the blood. These toxins are sent to the liver. The liver cells can destroy only a certain amount of such material, they can pass some of it on and if the material continues to come to the liver it is probably encapsulated thus giving cirrhosis.

The common origin of the hepatic, gastric and splenic arteries anatomically suggests a close physiologic and pathologic relationship of the organs supplied by the celiac axis. The spleen has its fair share of blood passing through the portal circulation and therefore cannot be disregarded in considering cirrhosis of the liver.

In Gaucher's disease the spleen grows slowly and ultimately becomes very large. It is associated with a secondary anemia. It usually begins about the time of puberty and may last for twenty-five years. The endotheliomatous growths that are finally found in the liver and other organs can be prevented by early splenectomy. Its classification probably belongs with the new growths.

Leukemia has not been regarded as amenable to surgical treatment, but it is true that the leukemic process is at times quite definitely connected with the spleen. In such cases, according to Dr. Wm. J. Mayo, after improvement has occurred from radium

therapy, splenectomy should be considered.

Hemolytic jaundice is a most interesting malady. Two types are recognized, the congenital and the acquired. The congenital type is not incompatible with good health. The acquired type is more serious. It is probably at times erroneously diagnosed hypertrophic cirrhosis of Hanot. The cause of hemolytic jaundice is not definitely known. Chauffard and Widal think the increased fragility of the red blood cell is the essential factor. Eppinger calls the condition hypersplenism. It is certainly true that there is always an increased hemolysis and during a crisis the amount of blood destroyed may be very great. When the blood making organs are exhausted the blood picture is similar to pernicious anemia.

The jaundice in hemolytic icterus is an acholuric jaundice. There is no pruritus and no bradycardia. It is usually remittent but never entirely disappears.

Splenectomy is indicated in Von Jaksch's disease if the case does not improve under medical treatment. The removal of the spleen gives especially good results in splenic anemia and in hemolytic jaundice and in Gaucher's disease if done early. The operation is probably indicated in certain cases of hepatic cirrhosis and leukemia. It is only exceptionally indicated in malaria and syphilis of the spleen.

From a therapeutic standpoint pernicious anemia is a most discouraging disease. The consensus of opinion at the symposium on the treatment of pernicious anemia held at the Detroit session of the American Medical Association a year ago was that multiple blood transfusions and splenectomy offered the best hope of prolonging the life of the patient. There is no evidence that any pernicious anemia patient has ever been cured.

An attractive theory of the etiology of pernicious anemia is that it begins as a focal infection. Following this theory the treatment indicated is to remove any or all foci of infection that can be found. This usually means an extraction of a certain number or all of the teeth following an exact diagnosis by the x-ray. Scaling the teeth is not so effective in eliminating infection as extraction excepting in slight de-

grees of pyorrhea. Apical abscesses and dead teeth are best treated by extraction when the patient has a systemic infection.

The gall bladder and appendix in a goodly number of pernicious anemia cases harbor a hemolytic streptococcus and should be removed.

The spleen should be removed after the patient is got in suitable condition by multiple blood transfusions.

The patients who should be treated surgically are those with a moderately enlarged spleen and an active hemolysis. The small spleen in pernicious anemia is a terminal finding and comes coincidentally with a bone marrow exhaustion. Bone marrow insufficiency is indicated in the blood picture by a low leucocyte count and a reduction of the polymorphonuclear neutrophils. Giffin says, "A complete inversion of polymorphonuclear and lymphocyte percentages, that is, a very low polymorphonuclear percentage with a high lymphocyte percentage, is an unfavorable indication, though it does not mean that a subsequent remission may not occur. If a patient with high hemolytic values is able, in spite of active hemolysis, to maintain a blood picture with favorable characteristics and only moderate anemia, there should be present an active bone marrow, and the case would appear to be a more favorable one for splenectomy. Irrespective of high or low hemolytic values, if the leucocyte count is consistently low with an inversion of the differential count, and the anemia extreme, showing no reaction after transfusion or medicinal treatment, the case would seem to be an unfavorable one because of probable advanced pathologic change in the bone marrow.

Transfusions alone will not infrequently give a remission in pernicious anemia though not so regularly as splenectomy. After splenectomy the Schneider test shows a marked fall in the value of the blood derived pigments in the duodenal contents.

In blood transfusion work the selection of a donor is the most important part of the whole procedure. So far as transfusion is concerned all people fall into one of four groups. The microscopic iso-agglutination test of Brem is the simplest and quickest

way to determine the group. By keeping on hand both a group two and a group three serum it is necessary to test only the unknown corpuscles to determine the group. This method enables one to correctly classify a patient by collecting only a drop or two of blood.

In testing donors it is customary to take several centimeters of blood for the serum and a few drops in a citrate solution for the corpuscles. A known two or three serum and cells are then tested respectively with the unknown serum and cells and observed under the microscope in a hanging drop. The drop is agitated from time to time to hasten the agglutination. It is very desirable to have several known sera on hand so that when the reaction is doubtful the unknown group can be tested again with several known groups. I do not know of anything that requires more painstaking care and patience than to classify certain bloods. Some fall into their groups very readily in just a few minutes. The brick dust precipitate enables one to see the agglutination before it is placed under the microscope. Other bloods agglutinate only after forty-five minutes and the reaction is then not sufficiently distinctive to satisfy one. It is impossible for one not to be greatly influenced by his own experience. We have never had a severe reaction in any transfusion since we have been testing all the bloods ourselves by the microscopic method.

On several occasions we have thrown out of our list a donor whose blood was not readily classified. We have then continued to work with this blood until by repeated examinations we have classified it correctly. It seems quite probable that some of the severe reactions that are reported from time to time are due to an error in classifying the group. Poor technique in collecting the blood may give a severe reaction when it is transfused. The blood should be collected quickly and, of course, should not be infected in the process. Transfusion is like any other surgical procedure, the more simply it can be done the better.

Direct transfusion is more complicated than indirect and has the very great disadvantage that it is impossible to tell how

much blood is being given. In every community the men who are honest will probably admit that in certain of their direct transfusions the patient probably got no blood at all. In an indirect transfusion every one observing the procedure can tell that the patient is getting the blood and how much he is getting.

There are many ways to give an indirect transfusion. A method should be chosen that can actually be used at any time and in any place. The method that we use is the citrate method. It is the simplest and the surest method of all. A large needle is used in collecting the blood. The amount of blood collected is measured accurately. Thirty c. c. of a two per cent sodium citrate solution in nine-tenths per cent salt solution is placed in a glass graduate, blood is allowed to run into this graduate until the two hundred and fifty c. c. level is reached, then thirty c. c. of the citrate solution is again added and the blood allowed to fill the graduate to the five hundred c. c. mark. During the collection of the blood it is gently stirred with a long glass rod. Transfixing the donor's vein in its superficial third with a cambric needle before inserting the large needle or cannula is a very great help in getting the blood properly. The collected blood is transferred to an ordinary salvasan apparatus and transfused into the vein of the recipient. If the blood has been collected awkwardly it is safer to strain it through gauze, otherwise straining is not necessary.

The donor should belong to the same group as the patient but if this is impossible a donor should be chosen whose cells are not agglutinated by the serum of the recipient. In an emergency a group four may be used for any patient. A recent Johns Hopkins paper suggests that it is safer to use the washed corpuscles of a four in salt solution in an emergency than to use whole blood. Washing corpuscles or any other extensive laboratory work gives an opportunity for the blood to become infected. It also takes time and an emergency hemorrhage requires quick work. I have used the whole blood of a group four many times in an emergency without any severe reaction.

While it is possible to get the blood from the proper donor and transport that blood to a distance, nevertheless it is safer to collect the blood from the donor at the time and place it is to be used.

Patients have been transfused for a great many different conditions.

The acute hemorrhages should lead the list of indications. If a patient loses half the blood in his body at one time he will die unless transfused. No other solution will do what blood will do for such a patient. In such a case transfusion is curative if the bleeding stops. In an inaccessible hemorrhage the fibrinogen in the transfused blood also helps to check the hemorrhage.

In the bleeding after operation in jaundiced patients transfusion is very helpful. It is indicated also in the hemorrhage of the new born.

In pernicious anemia multiple transfusions are ordinarily required. We have been transfusing these patients every eight days until the blood picture is satisfactory. The average number of transfusions necessary is six. When the red blood cells are below one million we have learned that it is best to give only from one hundred to two hundred c. c. of blood. The quantity is gradually increased with each transfusion. In all pernicious anemia cases the blood is studied twice a week. One examination is made three days after the transfusion and the second examination four days later, just before the next transfusion. It is interesting to note the stimulation of red cell regeneration as shown by this method of tabulation. In the four day interval between the first and second count there is not infrequently an increase of two hundred thousand or three hundred thousand reds.

Transfusion should be used much more than it is to prepare for operation patients having a secondary anemia. Bleeding fibroids are a good example of this class.

The above are the only conditions for which I have personally transfused patients.

Some of the other published indications are based on a misconception of the nature of the disease such as transfusions for illuminating gas poisoning.

Some of the supposed indications are rather fanciful and should not be followed by the average man until more data are available.

The indications mentioned stand on a very solid foundation and the claims made for them can be proved.

550 Metropolitan Building.

DISCUSSION.

H. G. Wetherill, Denver: I have had a limited experience with blood transfusion, enough, however, to appreciate the excellent work Dr. Buchtel has done in this field. I agree with him wholly regarding the fallacies of direct transfusion. It is not only a delicate surgical procedure in itself, but it is absolutely uncertain as to the amount of blood carried over. I have had two or three cases in which direct transfusion by Crile's method was done with excellent results, but we never did know how much blood was given the patient, and it is impossible to know.

I should like to speak a word for a method which I have used once successfully. I refer to the use of whole blood with the Percy tube. It is not quite so simple as the citrate method, but I think it has certain advantages. It is inconceivable that one may introduce into the blood stream as much citrate as is necessary without the possibility of its sometimes doing harm. One case to which I have referred, a bleeding fibroid, in which the blood was taken directly from the donor in the Percy tube and transferred to the vein of the recipient, was highly successful and satisfactory. In a second case, in which an attempt was made to take the blood through a needle, and not into the tube direct, I failed.

Charles N. Meader, Denver: This group of blood diseases in which Dr. Buchtel has done such excellent work offers one of the most interesting fields in medicine today, and there is yet a great deal which we do not understand about them. A point I should like to make is, that, however successful splenectomy may appear to be in some of these cases, even in those of chronic family jaundice in which it is apparently curative, surgery does not solve the problem entirely. There is involved not only the factor of the spleen but an unknown factor beyond the spleen which is probably in the nature of an intoxication; that is, in the production of pernicious anemia, chronic family jaundice or the various splenic anemias there is probably a factor at work which in conjunction with certain activities of the spleen produces the clinical picture of the disease. Certain clinical characteristics of these cases would suggest this, and the fact that splenectomy is usually merely palliative would seem to indicate that this form of treatment does not solve the problem entirely.

I should like to speak of a case which has just come under my observation, which I believe to be one of chronic family jaundice of the acquired type, and in which I hope possibly to work out something along this line. The patient is an unmarried woman, thirty-one, who has had since the age of nine recurring attacks similar to the "acidosis" attacks of young children. She was free for a period of about ten years but has been subject to attacks for the past eight years. During each of the past three years a series of attacks has begun in July or August and ended

in late September. This year an attack has begun each Monday since the end of July and continued about thirty-six hours. She speaks of the appearance of a mass in the left flank with each attack. Examined between attacks she showed the typical café au lait skin, with slight jaundice of mucous membranes and conjunctivae, of the patient with chronic family jaundice. Against this diagnosis was the fact that no spleen could be felt and no splenic enlargement made out by percussion. Four days later during an attack the spleen, clearly notched, was palpable almost to the median line and extended downward to within three fingers' breadth of the crest of the ilium. A half hour later the lower and inner borders of the mass had receded approximately half an inch. During the night the patient found the mass well beyond the mid line but upon examination the following morning no spleen could be palpated, and the splenic outlines were normal by percussion. Examination of each specimen of urine passed during the attack showed no abnormality nor was there any increase in total amount. The remarkable variation in the size of the spleen was a striking feature. Blood examination showed a well marked secondary anemia; fragility tests have not yet been made.

There are on record two somewhat incomplete studies of the metabolism in chronic family jaundice, neither of which deals with the blood chemistry. It is not improbable that such studies may throw light upon the etiology of this condition, and Professor Lewis of the department of biochemistry in the medical school of the University of Colorado is undertaking such a study in this patient. We know that certain hemolysins can cause a blood picture similar to those of chronic family jaundice and pernicious anemia, and it is not unlikely that the unknown factor is to be sought in an aberration of protein metabolism.

G. W. Anderson, Casper, Wyoming: In the bleeding of the newborn child, is it safe to advise using the blood of the mother in case you have not the facilities to determine which of the groups she belongs to, and does it minimize the danger of hemolysis to give it subcutaneously? Is there much value in it? Those who have not access to a laboratory would like to have Dr. Buchtel mention whether it is of much value and what his opinion is about the mother's blood.

F. C. Buchtel (closing): Dr. Wetherill's suggestion that citrate in large quantities is dangerous to the recipient is true. At first, the amount of citrate used was entirely too large, which was one per cent solution of citrate. As you know, now the amount of citrate is two-tenths of one per cent, that is, in five hundred c. c., instead of using fifty c. c. of two per cent solution, we use sixty c. c. to allow for inaccuracy. With that amount of citrate solution, making about two-tenths of one per cent solution of citrate in the blood that is transfused, it has been proved quite definitely, after having been used many thousands of times, that it is not dangerous to the patient.

With regard to Dr. Meader's discussion, the amount of blood that can be lost in one of these crises in hemorrhagic jaundice is enormous. In one crisis one may lose the whole volume of blood, and during this time bile may appear in the urine also.

Vincent has an ingenious method of giving blood to children. He gives it through the anterior fontanelle and has done it a number of times. The child has no group until it becomes four or five years of age. The group reaction is negative until that time. One can use any

blood to transfuse a baby. Practically it is used ordinarily from the father, sometimes from the mother, but any blood that is given to the child ordinarily serves to give the fibrinogen which will help the clotting. This is not always effective, as you know. Sometimes the blood that is transfused in a child does not stop bleeding, and there may be some other foreign protein that will. In one case at the Massachusetts General Hospital that I know of the bleeding was finally stopped by beefsteak put on the cord. They tried horse serum, transfused blood, and tried everything else that you could think of, but finally they got a foreign protein in the beefsteak which was put over the navel and that checked the hemorrhage.

The use of whole blood from the vein of the father injected subcutaneously in the infant is more easily done than transfusion into a vein. It is difficult to find the vein in a child, and if it can be given in the anterior fontanelle, that probably is a satisfactory way.

I have devised a little glass air trap which I believe makes that simpler, in that it prevents the aspiration of air when the needle is inserted into the anterior fontanelle; there is negative pressure in the superior longitudinal sinus. When you put the needle in you want to be sure you are in the sinus before you inject blood by having the air trap with side stops through which you can aspirate a little blood; having salt solution to fill the air trap first, you can cut off the side piece and allow the salt solution to run first and later pour blood in.

The chief purpose of the paper was to try to stimulate men in towns like Colorado Springs and Denver to get a big list of donors. In many towns you can get donors, but it is time-consuming and ought to be done by some one who has laboratory assistants, who can spend an enormous amount of time in classifying these donors, having Wassermann examinations made of them and keeping in touch with them.

BRONCHOSCOPY AND ESOPHAGOSCOPY.*

T. E. CARMODY, M.D., D.D.Sc., F.A.C.S.,
DENVER.

Although esophagoscopy was first used as early as 1807, when the upper end of the esophagus was examined by Bozzini, and at various times during the next ninety years, not until 1897 was anything of note done, when Kerstein devised his direct laryngoscopy and tracheoscopy.

In the same year Killian removed a foreign body from the right bronchus, the first work of importance in this country being in 1899, when Coolidge removed a part of a tracheotomy tube from the right bronchus. Work in lower bronchoscopy was done by Killian and others during 1900 and 1901. Ingals in 1904 used a separate light carrier

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in a Killian tube and removed a pin from the bronchus.

From 1904 to the present day, great advances have been made, as Jackson did his first work in that year, and, as a result of his interest in the work and instruments, greater results have been obtained.

The instruments used abroad depend mainly on the use of reflected light or the use of an electric headlight, while the instruments of Jackson and Mosier, which are mostly used in this country, have the light at the distal end. The choice depends largely upon the ability of the operator to use instruments with a slightly varying light, such as the foreign instruments, or whether he wishes what might be called a more positive light, directly at the spot to be attacked.

Another discovery along this same line was made by Killian in 1909 and 1910, while working with an artist in attempting to show him the larynx of a cadaver. As Killian did not have time to hold the larynx open, he improvised props which succeeded so well that he made use of the method clinically, as suspension laryngoscopy. While the suspension apparatus is very valuable for work on the larynx and upper end of the esophagus, it is only of value in upper bronchoscopy and esophagoscopy as an aid in introduction of the instrument, but in many cases is a hindrance to the introduction of a tube into the larynx on account of the vocal cords and ventricular bands being made too tense, and the man who cannot introduce a tube without this, will not continue for long in bronchoscopy work. In passing, we should take note of the great work of Lynch on the larynx, and improvements of this apparatus, as he first removed growths entire from the larynx and sutured the membrane.

There has been much controversy over the question of anesthesia in these procedures, many being in favor of a general anesthesia, while others, as Jackson and Johnston, prefer local anesthesia or no anesthesia, in the great majority of cases. This point each man must judge for himself, considering the individual patient to be operated upon. However, there seems to be a consensus of opinion that children under six years can be

operated successfully without anesthesia.

Laryngoscopy, either direct or suspension, bronchoscopy and esophagoscopy are performed for diagnosis, removal of foreign bodies, removal of tumors and cicatricial tissue, and for washing out cavities, containing either pus or foreign matter, or diverticula of the esophagus which may contain food.

Most important and by far the most in demand is the service of removing foreign bodies. In foreign body work, we have been especially fortunate, most of these having been cases of upper bronchoscopy, although some have been done through a tracheotomy opening, this being designated as lower bronchoscopy.

Next to tubes for foreign body work, we must consider forceps. Of these we have many forms for different bodies, and need various lengths.

Many foreign bodies found in the bronchi and esophagi of children, are, as we should expect, ordinary household articles, or a portion of some article of diet, but at times we discover what would seem a most unlikely object.

Lynnah has saved many diphtheric cases by removing the membrane that could not be coughed up after loosening by antitoxin.

Case I. July 11, 1914. U. W., age seven years, referred by Dr. Beck. Jack in esophagus, opposite cricoid constriction. Removed with Mosher esophagoscope. Anesthetic, ether.

Case II. August 12, 1914. M. F., age seven years, referred by Dr. Hickey. Twenty-five cent coin in esophagus below plica cricopharyngea, present three or four hours. Removal attempted but coin had entered stomach and was passed twelve hours later.

Case III. February 18, 1915. G. S., age two and one-half years, referred by Dr. I. B. Perkins. While playing with beans, aspirated half of one. He was brought to Denver three days later with pneumonia. Object removed by lower bronchoscopy (Jackson bronchoscope) and child recovered after prolonged illness.

Case IV. February, 1915. G. F., age four years. Aspirated grain of corn twenty-four hours previously. Found in right bronchus

but moved back and forth by coughing, to left, from which it was finally removed with Bruening esophagoscope. Anesthetic, ether. Child had bronchitis at the time of operation, but the time required to remove object irritated larynx to such an extent that tracheotomy had to be performed thirty-six hours later. Child died forty-eight hours later, apparently from edema of the lungs.

Case V. July 20, 1916. K. B., age four years, referred by Dr. Burket. Open safety pin in esophagus posterior to larynx. Present twenty-four hours. Removal comparatively easy, but child complained of soreness of neck for several days. Left hospital against my advice and during next night, sat up in bed to drink glass of milk and died. Cause of death unknown as post-mortem was refused.

Case VI. August 8, 1916. L. W., age six years, referred by Dr. Leonard Freeman. Two-inch belt pin in larynx with point in right ventricular band. Attempted removal without anesthetic, but child could not stand pressure on tongue and warm ether was administered. On introduction of bronchoscope, pin was found in right lower bronchus, from which it was removed.

Case VII. August 14, 1916. H. C., age twenty years, referred by Drs. H. C. Burns and S. B. Childs. Penny in lower right bronchus. Removal tried under warm ether but unsuccessful. Another attempt was to have been made under fluoroscope, but patient, of low mentality, left ward while nurse was busy, and slept on lawn outside of hospital, and as he seemed to have a severe bronchitis, operation was postponed. On the following day during coughing spell, penny was expelled.

Case VIII. April 10, 1917. E. T. V., age fifty-two years, referred by Dr. R. G. Smith. In attempt to swallow a lamb chop without masticating, as he always removed his false teeth before eating, a piece of bone in the chop prevented meat from passing more than a little beyond plica cricopharyngea. Present five hours. Removed with Mosher esophagoscope. Anesthetic, warm ether.

Case IX. April 15, 1917. R. G. P., age fifty years, referred by Dr. Hickey. Portion of chicken bone in esophagus. Present one

hour. Removed with Jackson esophageal speculum without anesthetic, except cocain spray in pharynx.

Case X. April 9, 1917. A. B., age two years, referred by Dr. Ruegnitz. Peanut in lower left bronchus. Upper bronchoscopy unsuccessful. With lower bronchoscopy, succeeded in removing portions with forceps and aspirator and remaining portions were subsequently coughed through tracheotomy wound. Anesthetic, warm ether.

Case XI. April 20, 1917. T. H. N., age eight and one-half months, referred by Drs. McMichael and Foley. Safety pin in esophagus twenty-one hours, point into posterior laryngeal wall. Removed with Jackson laryngeal speculum with forceps outside. Pin was turned and removed without injury. Recovery was uneventful. Anesthetic, warm ether.

Case XII. May 3, 1917. J. M., age one year, referred by Dr. Arndt. Small tack in left inferior bronchus. Two previous attempts had been made by very good laryngologist to remove object, without success. Removed with aid of fluoroscope and Bruening bronchoscope. Anesthetic, warm ether.

Case XIII. June 18, 1917, S. B., age six weeks, referred by Drs. Cotter and Danahey. "Star" tobacco tag in esophagus in plica cricopharyngea. Present twenty-four hours. Removed with Jackson laryngeal speculum. Anesthetic, warm ether.

Case XIV. May 24, 1917. G. B., age six months, referred to Dr. G. L. Monson. One cent coin in esophagus below plica cricopharyngea. Present four days. Removed, warm ether anesthetic.

Case XV. August 24, 1917. E. S., age eleven years, referred by Dr. Gengenbach. Bullet in lower left bronchus. Present six weeks. Abscess of lung; temperature 104.8°. Attempted removal without success but forced down about three-quarters of an inch. Abscess cavity aspirated. Temperature normal and child gone to country. Will return next week for removal of foreign body.

Case XVI. August 28, 1917. C. M., age fourteen years, referred by Dr. E. W. Collins. Ordinary pin in larynx. Present one-half hour. Head resting on left arytenoid and point in epiglottis. Removed with Jackson

laryngeal speculum, without anesthetic, except cocain spray.

Case XVII. August 30, 1917. H. F., age ten years, referred by Dr. Herriman. During tonsil operation, a temporary tooth was aspirated. Dr. Herriman referred the case one week later, but did not perform the tonsillectomy. Removal attempted with pneumothorax resulting, with subsequent pyothorax. Rib removed by Dr. Shere. Medical treatment by Dr. Gengenbach with recovery. Tooth at present in pleural cavity.

No cases of esophageal stricture, abscess of lung or allied conditions are included.

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DISCUSSION.

Dr. Alexander C. Magruder, Colorado Springs: I desire to say a word or two in reference to Dr. Carmody's paper. In the first place, this subject is one of the most fascinating that can be undertaken. There are a great many difficulties associated with it, and unless the operator is pretty careful of his patient, his anxiety in searching for the foreign body and his intense interest to discover it will lead him to longer manipulations than is good for the patient. Furthermore, it is always necessary to be extremely careful to use as little force as possible, so that there is no danger of rupture of a bronchus.

A very interesting case was shown us in New York City, by Dr. Arrowsmith; that of an insane man who had swallowed a piece of quartz half the size of a hen's egg. After that had been removed and the patient was allowed to leave the table, he was still unable to swallow. This was in the esophagus, and the next day he complained so much that a second examination was made and lower down Dr. Arrowsmith found a piece of quartz larger than the first piece he had removed. That thing went on for three consecutive days, the doctor each time taking out more. The man had almost filled the esophagus. Six or eight pieces of quartz were removed.

Dr. Thomas J. Gallaher, Denver: Dr. Carmody is to be commended for his success in extracting these foreign bodies. The laryngologist is the man to do this work. He is more familiar with the parts, although it is not difficult to acquire skill and to become practical in this work. I am surprised to see how few laryngologists are equipped for it both as to armamentarium and experience. It is the duty of the young laryngologist to become proficient in bronchoscopy and esophagoscopy. The day of guessing is rapidly passing and by means of roentgenograms and direct inspection we are doing more exact work. Using these methods it is comparatively easy to diagnose cardiospasm, diverticulum and detect growths and foreign bodies in the esophagus or bronchial tree. Pressure of the thymus gland in children causing obstruction or asthma is to be borne in mind. This is to be diagnosed by passing the bronchoscope beyond the point of tracheal pressure.

One word, please, about the teeth and tonsillectomy. In performing tonsillectomy under general anesthesia in a child all loose teeth should

be removed lest they might work out, incidentally to the use of the gag, and lodge in the lung. The first molar is more easily jolted out with the side gag than the front teeth. It is safer to place the gag in front. There is only one contraindication to investigating the lung for a foreign body, and that is death. In suspected foreign body in the esophagus or the lung investigation must be made at once. A foreign body left in the lung would probably prove fatal.

Sometimes it is very easy to remove foreign bodies, while at others it is most difficult and may be impossible. There are bound to be some failures in the best of hands.

In closing I repeat that it is the duty of every laryngologist to perfect himself in bronchoscopy and esophagoscopy.

Dr. Charles B. Van Zant, Denver: I desire to express my high admiration of Dr. Carmody's work and that of other specialists who are doing this kind of work, involving the use of the bronchoscope and the esophagoscope. I think it carries with it as hard a technical procedure as I know of, after witnessing it in some cases which I have referred to these men. One of these I would here cite in illustration.

About three months ago a patient of mine, in eating some stewed chicken, swallowed a piece of the breast bone, triangular in shape, three quarters of an inch long, which became lodged in the lower part of the esophagus. The sharp ends of the bone were deeply embedded in the walls of the esophagus. An x-ray plate taken by Dr. Childs revealed the bone in situ as I have described. I asked Dr. Robert Levy to remove it; and if I ever saw a difficult task most skillfully done, it was in this case. After careful cocaineization of the pharynx and esophagus, the esophagoscope was readily passed, but the piece of bone had torn the mucosa all the way down to the point of lodgment, causing the blood to constantly well up and fill the tube of the instrument. By the time the doctor could clear out the blood, get a fair glimpse of the bone, and introduce long forceps, the tube would fill again. This caused the greatest difficulty in attempting to get the bone in the bite of the forceps. After prolonged effort, however, the foreign body was firmly grasped. The bone was larger than the esophagoscope and could not be broken in pieces and so removed. The only alternative that remained, aside from a resort to a dangerous thoracotomy, was to draw out, all together, the forceps, the tube, and the piece of bone, which was done. This necessarily lacerated the esophagus to some degree. For two or three weeks subsequent to the extraction of the foreign body, there came up into the mouth a good deal of foul material, as the sloughing mucous membrane and esophageal tissue were thrown off. No perforation occurred, nor abscess formation, and the patient made a slow but uneventful recovery. Whether there will develop later a moderate stenosis of the esophagus in this case, time will show.

Dr. H. A. Smith, Delta: The history of these cases has been gone over very carefully in this paper, and the technic of these operations should be left to the men who are best prepared to do this kind of work. The aspirating apparatus is rather cumbersome in a good many of these cases. The man who is doing this work needs his anesthetist trained thoroughly. His assistants should likewise be trained to the minute, and his judgment must be sufficiently good to cope with any situation that comes up. More

than that, he must be careful of his patient afterwards. The patient must be under his observation, carefully watched and taken care of on account of pneumonia or other conditions that may occur.

I had the pleasure of seeing Dr. Jackson and his assistants do some of this work last year, and the one thing that impressed me favorably was the organization he has to work with.

Dr. Carmody (closing): Dr. Childs has taken many roentgenograms of cases for me and they have shown up very nicely.

Dr. Van Zant brought up the question of searching a long time for the object or foreign body and the manipulation necessary to remove it. In the esophagus it does not make so much difference how long you manipulate for the object. That case is a lung case I mentioned, but in the trachea and bronchi, going through the larynx and manipulating too long, we may have a fatality if we do not desist.

The point made by Dr. Gallaher is timely. We become so interested that we feel the next time we will get the object, and so we work a little too long, and it is much better in these cases to do a lower bronchoscopy rather than a tracheotomy afterwards, because the swallowing of some epiglottic tissue may cause a great deal of trouble, and it may be necessary to do tracheotomy later on.

The point brought up by Dr. Gallaher in regard to losing teeth is very important. In doing these operations I have the head of the patient downwards, and I have never been so unfortunate as to lose a tooth in the larynx or trachea. A patient is very likely to lose a tooth unless she or he has the teeth examined beforehand. In many cases I extract loose teeth before taking out the tonsils.

Another thing I do is to use the Whitehead gag, or some modification of it.

As to the point Dr. Van Zant brought out of blood clouding the field, that is very important, and I have not had as much trouble with that since I have been using an aspirating apparatus which is employed for anesthetic purposes for forcing the anesthetic. An aspiration apparatus is much better than the one used by Dr. Jackson which is attached to the end of a tube. With this apparatus you can draw out any amount of fluid and keep the field clearer and do it without much trouble.

A great many of these objects I have removed, and I have had to go after them at the same time with the esophagoscope or bronchoscope. They were too large to fit the esophagus or trachea of a child. The only thing that can be done in a case like the one Dr. Van Zant speaks of is to break the object in two and bring out a part or it, and the difficulty of finding it may preclude the possibility of doing it. The only way to do that was to bring it out as it was.

The point brought out by Dr. Smith of doing team-work is excellent. I always use the same anesthetist and I try to use the same assistants. It helps a great deal in my work, and I feel that it is very important. A man with mediocre ability, if he has the same anesthetist and the same assistants, will do better than the man with great ability who is constantly changing anesthetists and assistants.

ACHYLIA GASTRICA.*

J. L. MORTIMER, M.D., DENVER.

Achylia Gastrica is a condition in which stomach juice is not secreted, as shown by the entire absence from the gastric contents of hydrochloric acid as well as the ferments. The homonymously termed "apepsia gastrica" resulting from achylia is characterized by the faulty digestion of food, and may accompany other maladies of the stomach. Achylia must be differentiated from hypo- and ana-chlorhydria, conditions in which there is either a diminution or absence of hydrochloric acid whereas the ferments still exist.

Following Fenwick's work in 1877, on the pathology of atrophic gastritis, there appeared the clinical studies of Levy, Ewald, Rosenheim and Jaworski. Einhorn named the condition "achylia gastrica" and described several striking cases. In 1897 there appeared the classical monograph of Martin and Lubarsch in which the entire clinical, anatomical and pathological material is collected and critically analyzed.

The earliest clinically observed instances of achylia were considered as resulting from atrophy of the gastric mucous membrane with destruction of the secretory glands. Furthermore it was soon recognized that achylia did not signify a distinct malady since it may accompany carcinoma ventriculi, advanced gastritis, also general diseases among which may be mentioned pernicious anemia and chronic nephritis. It was Einhorn who first noted instances of achylia gastrica in which pathological changes were absent. Thereby a new clinical disease was created—absence of gastric secretion as a primary condition and not as a terminal stage of atrophic gastritis.

The Secretory Mechanism of the Normal Stomach. The modern physiology of the stomach was founded by Pawlow and developed further by Cohnheim, Bickel, Cannon and others. According to the teachings of these observers the function of the fundus is chiefly secretory whereas that of the py-

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lorus is chiefly mechanical. In the fundus the parietal and chief cells are found; the former secrete hydrochloric acid, the latter pepsin. These glands possess an independent nerve supply. Gastric secretion is influenced by various factors. Mechanical irritation and electrical irritation have been found not to stimulate it. Pawlow's dogs manifested a vigorous secretion (appetite juice) when food was shown to them. Conclusions from the clinical studies of Boas oppose this finding in that he found that an increased appetite may exist with a diminished gastric secretion and furthermore a poor appetite often accompanies a normal or excessive secretion. Of marked influence is the reflex action from the mouth to the stomach of spiced food. Furthermore the art of mastication plays an important part in gastric secretion, for Biernacki demonstrated an insufficient amount of juice whenever food was swallowed hurriedly. Pfaundler and, later, Bickel found that breast suction by the infant acted as a stimulus for gastric secretion probably through some reflex path.

Summarizing the above data regarding the secretory mechanism of the human stomach, it can be stated that secretion is stimulated during mastication, also by a reflex chemical action from the mouth, and it is furthermore intensified by the appetite. Directly after food enters the stomach the glands cease secreting for a brief period (latent stage). However, there is already present juice of sufficient strength to act on the ingesta and by the absorption of the resulting products of digestion there occurs a further stimulation of gastric secretion. A mechanical action of the ingesta plays no important role.

Pawlow's experiments have been repeated by Bickel and Umber on gastrostomized human beings. Of special value are the findings of Umber since his patient showed a normal degree of acidity after test meals and furthermore in spite of the fistula the appearance of the gastric mucous membrane was not materially changed.

The normal gastric juice contains from twenty to forty free hydrochloric acid. The total acidity ranges from forty to seventy.

In addition to hydrochloric acid the gastric glands secrete pepsin as well as a fat-splitting ferment. According to recent investigations the curdling of milk is performed by pepsin so that rennin and pepsin are considered identical. About six hundred c. c. are secreted during the digestion of a test meal. There is a daily secretion of about one thousand five hundred c. c. One hundred grams of raw scraped meat require about three hundred and fifty c. c. of seventy per cent total acidity.

The action other than mechanical of the ingesta on gastric secretions has received considerable study so that the following can be stated with certainty: secretion is lowered by nicotine (Bickel), fat (Strauss), cane sugar and concentrated salt solutions (Schule, Hamburger) also psychic depression. (Pawlow, Bickel).

A stimulation of gastric juice is produced by meat extractives, carbon dioxid, alcohol, appetite and warmth. The action of hydrochloric acid and pepsin changes the proteids into peptone and polypeptids. According to Boas the optimum of acid concentration reaches 0.25 per cent; according to O. Cohnheim, 0.36 per cent. There is a dilution of the gastric juice by the saliva, mucus and watery secretion, thereby causing a varying degree of acidity. Furthermore by a reflexly acting mechanism through the vagus there occurs an ascending curve of acidity until the height of digestion is reached and then the curve descends. In addition to proteid digestion the hydrochloric acid also dissolves connective tissue (Schmidt). Furthermore it influences the secretion of the pancreas when entering the duodenum. Of importance also is the anti-fermentative action of this acid, which checks the growth of bacteria, thereby preventing fermentation and putrefaction (O. Cohnheim). Finally hydrochloric acid regulates the working of the pyloric musculature ("pyloric reflex", V. Mering, Pawlow) by its action on the duodenal mucous membrane.

Pathological Anatomy. Our present scientific mode of thought requires a pathological, anatomical substratum for every clinically known disease. Whenever by our

methods we are unable to demonstrate pathological changes of cells, the disturbance is designated as functional. In achylia gastrica definite abnormal changes of the mucous membrane can usually be demonstrated. However, not infrequently there is a total absence of pathology. Einhorn considered this latter form as a distinct and separate malady, whereas Boas considered a normal condition of the mucous membrane extremely rare in achylia gastrica, for he usually found more or less definite signs of an interstitial or granular gastritis. On the basis of clinical and pathological anatomical observations the following can be stated with certainty: cases with absence of gastric juice do exist without evident pathological changes. The cause of this condition is a prolonged one and it forms a distinct entity. In neurasthenic individuals there is occasionally found a transient absence of gastric juice without any evidence of catarrhal changes; this can be termed functional or neurogenic.

We, therefore, differentiate between a primary congenital achylia simplex and the secondary achylia. The latter either develops on the basis of a neurasthenia or depends upon organic changes, accordingly accompanying diseases of the stomach (chronic gastritis, cancer of the stomach) or general diseases (pernicious anemia, pulmonary tuberculosis, typhoid, syphilis, chronic interstitial nephritis).

Symptomatology. A clear clinical picture of the disease can only be obtained in the primary, non-complicating form, whereas in the secondary achylia, the symptoms of the fundamental disease must receive consideration. Achylia gastrica may remain latent for a prolonged period. However, when the symptoms appear they may be classified into three groups; cases with (a) prevailing gastric, (b) prevailing intestinal, and (c) gastrointestinal symptoms.

The state of the patient's nutrition depends upon the condition of the gastrointestinal tract and, moreover, whether the intestines can perform additionally the function of the stomach. Cachexia is not encountered here excepting when severe ane-

mia with a blood picture simulating the pernicious type occurs.

The gastric symptoms in this condition consist of epigastric pressure, heaviness, sense of fullness after meals, nausea, eructation; occasionally gastric pain, pyrosis and heart burn; but the latter symptoms make one suspect an excess rather than an absence of gastric juice. Persistent and obstinate attacks of diarrhea are an important accompanying disturbance. In the stool the muscle fibers and connective tissue show poor digestion. A catarrhal enteritis results from the superimposed tax on the intestines incident to their performing the gastric function. The fats are well assimilated in spite of the presence of diarrhea. Absence of hydrochloric acid tends to cause putrefactive processes in the intestines, resulting in an increased production of indican, and the duodenum is found to contain a greater number of bacteria than are found with normal gastric secretion.

The appetite may be increased or diminished. More often there is a total indifference towards food intake. When achylia develops on the basis of a neurosis or psychosis there appear additional symptoms of a nervous nature, as palpitation, dizziness, dyspnea, hypochondriacal moods, insomnia, and gastralgia which at times resembles the crisis of tabes.

The objective examination of the stomach reveals a state of atony. There is rarely a delay of motility, on the contrary the stomach empties itself in less than the normal time. This can be explained on the basis of Pawlow's observations, for with no hydrochloric acid to produce the pyloric reflex the passage of the chyme into the duodenum is accelerated. On aspirating the gastric contents, after a test meal, the following is observed: the substance removed is a thick gruel, poorly digested and, occasionally, with mucus intermingled. Often the food particles are too coarse to pass through the tube. Furthermore, the fasting stomach may contain food remnants. On chemical analysis the reaction is found to be neutral or faintly acid with a total absence of hydrochloric acid and pepsin.

There is no manifest or occult bleeding unless caused by trauma from the tube.

Diagnosis. Of special importance is the differential diagnosis between essential achylia and the secondary achylia accompanying carcinoma ventriculi, heterochylia (Hemmeter), syphilis of the stomach, primary or secondary anemia, or chronic progressive gastritis. Chronic progressive gastritis is recognized by the presence of a large amount of mucus, especially in a fasting stomach. To differentiate achylia gastrica from carcinoma is often exceedingly difficult. The important points are the finding in cancer cases of lactic acid, the Boas-Oppler bacilli and also the positive occult blood reaction in the stool which shows a tendency to increase in intensity on each succeeding examination. Careful laboratory tests such as that of Wolf-Junghans, the improved method of staining the Boas-Oppler bacilli, the formol index and the glycytryptophan test, if carried out with the precise instructions of Smithie, will yield valuable results in a high percentage of cases. A great aid in the differential diagnosis is furnished by the roentgen ray and in a majority of cases of carcinoma it will supply sufficient evidence to clear existing doubts. Undisturbed or increased motility is found in achylia whereas in carcinoma there is a delay in emptying the stomach resulting in a six hour or longer residue. Even in the early stages of cancer there is a tendency to atony so that the food drops down, distending the stomach like a bag (Gross and Held). Peristalsis is absent over the infiltrated area.

In pernicious anemia the most important diagnostic points are high color index, polychromic and hyperchromatic condition of the red blood cells, leukopenia, diminution or absence of blood platelets, diminution of red blood cell resistance.

By heterochylia is understood a condition in which the gastric secretions show various changes in the acidity values, for example, one examination may show a complete achylia and another may reveal the presence of acid even up to a hyperacidity. The mode of clearing up the differential diagnosis is subject to time.

Treatment. Of foremost importance in the treatment of achylia gastrica is the dietetic management. This must be strictly individualized according to the predominating symptoms, whether they are those of a general neurosis or whether of a gastric or intestinal nature. Meat is usually poorly tolerated so that if allowed it should be served minced or hashed with preference given to the white sorts and fish. Vegetables are prepared in puree form, especially potatoes, spinach, carrots, string beans and asparagus tips. Fats, excepting butter and cream, are poorly digested. Bouillon, broths, meat extractives and carbonated water have a tendency to stimulate the flow of gastric juices. Milk should be cooked. Cocoa, malted milk, rice, gries, tapioca may be allowed, also eggs, butter-milk, toast, zwieback, and reheated stale bread.

The medicinal treatment is of less importance than the dietetic or treatment directed to the general organism. It should be the aim to substitute hydrochloric acid and pepsin for the missing gastric juice. Some authors administer small doses of hydrochloric acid, ten to fifteen drops, whereas others prefer large doses up to one hundred and twenty drops. When given before meals it may stimulate the appetite. Generally it proves effective when taken with the meal. Bitters (condurage, cinchona, amara, nuxvomica, colomaba, orexin) are sometimes useful though their value has been overestimated by both the profession and the laity.

If any signs of gastric fermentation be present, gentle lavage, three times weekly with normal saline, salicylic acid or resorcin one to one thousand, is useful, especially in catarrhal affections, with achylia, associated with the accumulation of tenacious mucus. Other accessory measures that prove beneficial are gentle abdominal or general massage, faradization of the abdomen, the Priessnitz or hot abdominal compress and finally the alternating hot and cold abdominal douche.

These are the main principles under which the patients with achylia gastrica are treated. In the benign cases it is usually possible to free the patient of the distressing symptoms. The road to success is gen-

erally long and difficult, yet its final achievement warrants the efforts of the physician and the indulgence of the patient.

Metropolitan Building.

DISCUSSION.

Philip Hillkowitz: While achylia gastrica is not by any means a frequent disorder, nevertheless a discussion of it is very valuable on account of the fact that it may be confounded with carcinoma of the stomach which is, of course, far more frequent. The ground has been most excellently covered by the essayist. He has called our attention to the requirements of the pathologist, that any clinical entity must have a pathologic substratum; in other words, that there must be some anatomic change in the tissues to account for it, and that is why we have Einhorn's contention, namely, in the cases of achylia gastrica that he has had occasion to examine, no alterations were found in the mucosa because the pathologist has naturally considered it a priori since the time of Virchow, who first laid down this doctrine. It has been held by pathologists that there can be no change in function without, necessarily, some change in the tissues, but nowadays, with the new pathologic chemistry, we are beginning to doubt the universality of this dictum, and that is why there is a school that attempts to explain the etiology of achylia gastrica on the basis of innervation. Those who have worked out the nerve supply of the stomach find that there is a vāgus there which tends to excite gastric secretion and the sympathetic system which tends to inhibit it, and it is on account of some pathologic alteration in that respect in the innervation that achylia gastrica is produced.

I have not seen any reference to or any explanation that would bring in the hormone theory in connection with it. I am wondering, in view of the fact that the etiology is still in the speculative stage, if some one has not adduced a lack of function of the hormones in connection with achylia gastrica.

As regards the differential diagnosis, it is still in an unsatisfactory state, especially from a laboratory standpoint. The same holds true with reference to carcinoma of the stomach. It would be a very desirable thing if we had a characteristic test for carcinoma of the stomach the same as we have, for instance, in the line of syphilis, the Wassermann reaction. Unfortunately we have to go by a number of tests, none of which is pathognomonic but simply interpretative, and of these, as Dr. Mortimer has pointed out, we have the routine examination of the gastric contents, a determination of the free hydrochloric acid and the total acidity, and some of the newer tests, which seem to promise a great deal of help. We have the fractional test, that is, the Wolff-Junghans test, by which the albumin is determined in various dilutions of the gastric juice by following the gastric juice, first, one to twenty, one to forty, and then adding a reagent such as phosphorus tungsten acid, and in case of gastric carcinoma we find the reaction positive, even in the greater dilutions, which we do not find in the ordinary gastric juice.

There is also some promise in the formol test to determine the amino-acid in the gastric juice of patients suffering from cancer of the stomach. Acting as a ferment it splits the peptone into its components and simply links the amino-acid, de-

termining the extent of the amino-acid in that way.

As time goes on we expect to determine these things with greater facility.

News Notes

Advice comes from the secretary of the American Medical Association that hotel reservations already made for the annual meeting, June 10 to 14, indicate there will be a large attendance. It is urged that reservations be made early in order to secure satisfactory accommodations. A list of hotels with table of rates will be found on page 946 of the Journal of March 30. Tentative arrangements for section meeting places are outlined on page 868 of the Journal of March 23.

The National Association for the Study and Prevention of Tuberculosis will, beginning May 1, 1918, be an incorporated institution under the new name of National Tuberculosis Association. The new address will be 381 Fourth avenue, New York City.

The program for the fourteenth annual meeting of the National Tuberculosis Association, to be held in Boston, Mass., June 6, 7, 8, 1918, provides for daily general meetings and meetings of various sections and committees. Colorado is represented in the clinical section program by Drs. Charles W. Mills and A. M. Forster of Colorado Springs, who will present a paper on the treatment of tuberculous laryngitis by reflected sunlight, and by Dr. J. A. Rutledge of Woodmen, who will report on thirty-five hundred cases of tuberculosis. Headquarters of the meeting will be at the Copley-Plaza hotel, Boston. Directions as to hotel reservations and further information about the meeting will be found in the April bulletin of the Association.

The forty-fifth annual meeting of the National Conference of Social Work will be held in Kansas City, Mo., May 15 to 22, 1918. There are ten divisional programs, two of which, "Health" and "Mental Hygiene", are of distinctly medical interest.

Captain C. W. Presnall of Trinidad, writing from a field hospital in France, says he was sent to the rear after six months' active duty at the front. The doctor does not state whether his illness is due to wounds or other causes, but says he has not been on his feet for several weeks and is to be sent on to a base hospital or elsewhere for convalescence.

Captain John R. Espey left Trinidad in April to assume his duties with the M. R. C. at Camp Cody.

Dr. G. P. Lingenfelter has received an appointment as Passed Assistant Surgeon in the navy with rank of lieutenant.

Dr. O. R. Gillett of Colorado Springs, who has been serving on the exemption board in that city, has accepted his commission as lieutenant in the M. R. C.

Lieutenant B. Menser, temporarily disqualified for army service by an injury, has been appointed to fill the office of police surgeon of Denver.

Dr. Arthur S. Smiley of Denver is now a captain in the one hundred fifty-ninth ambulance corps, fortieth division, national army, at Camp Kearny.

Lieutenant M. A. Broemser of Holly is now at Camp Oglethorpe taking training in x-ray work.

Dr. H. S. Finney of Denver, now holding the rank of major in the M. R. C., was on his way

to the base hospital at Doniphan just as the April Colorado Medicine went to press.

Dr. W. Otis Calloway, pending an expected call to the army service, is now occupying the offices of Dr. C. T. Burnett at Boulder.

Dr. Curtis Atkinson of Fort Collins, who has been an acting major at the Wichita Falls cantonment, has recently received a major's commission.

Lieutenant E. B. Swerdfeger of Denver left on April 6 for training at Fort Riley.

Dr. W. F. Church of Greeley has received a captain's commission in the M. R. C. and is now awaiting a call to service.

Another indictment of a doctor by the federal grand jury for violation of the narcotic law was noted in April.

The midsummer meeting of the Western Roentgen Society will be held June 27-28, 1918, at Colorado Springs, with headquarters at the Antlers Hotel. Every physician interested in roentgenology will be welcomed by the society, and an interesting and instructive program is assured.

Dr. Fred Weber has severed his connection with the Boulder, Colorado, Sanitarium and has taken charge of the baths at Idaho Springs.

Dr. Green of the Boulder, Colorado, Sanitarium has been in California attending a national convention of the Adventists.

Dr. C. W. Polley of Boulder has been appointed to the teaching staff of the University of Colorado hospital.

Dr. M. E. Miles has been appointed health officer of the city of Boulder.

Dr. Callaway of the M. O. R. C. expects soon to leave Boulder for the Italian front with Base Hospital number one hundred and two of New Orleans, La.

In the past winter a number of Boulder physicians formed a diagnosis club. They have been holding luncheons at the Physicians' building each Thursday noon, at which two cases are discussed.

Statements recently emanating from the office of the Surgeon General of the United States make it perfectly clear that the government will not tolerate the retention in the medical colleges of students of draft age whose intelligence and application to their studies do not justify the expectation that at the end of their course they will be valuable as army surgeons. Such students, it is insisted, must be weeded out of the colleges and assigned to non-medical military service.

The wife of Dr. Gurney C. Wallace of Denver died of pneumonia Friday night, May 3, only thirty-six hours after the onset of the disease.

Dr. M. Ethel V. Fraser of Denver has received an appointment to the staff of the American Women's hospital in France and will leave Denver soon. Dr. Fraser has devoted a great deal of time to patriotic work of various kinds and has served especially in instructing the first aid classes organized by the American Red Cross in Denver. The staff of the American Women's hospital is composed entirely of American women physicians, the nurses and nurses' assistants also being Americans.

Dr. Miller E. Preston of Denver, now serving in the M. O. R. C. in the Philippines, has been given a major's commission.

The Philadelphia Postgraduate School of Neurology, in its third annual announcement, includes a course in neurology and psychiatry for the medical reserve corps of the U. S. army. Clinical material from the Philadelphia General hospital

and the Philadelphia Hospital for the Insane is at the disposal of the school.

Dr. J. H. Bush and Dr. J. C. Chipman, both of Sterling, were in Denver to hear Major Jump's talk and remained a day or two.

Dr. J. H. Daniel of Cliff has sold his practice and gone to New York for postgraduate work.

Dr. M. L. Babcock of Sterling visited Chicago in the middle of April.

Dr. George B. Lewis of Denver, who received a commission as lieutenant last September, left for Fort Riley the latter part of April.

Lieutenant Earle Kemble of Golden left for Fort Riley April 24 for training in the M. O. R. C.

Dr. Robert Levy of Denver left May 1 for Camp Lewis, Wash., where he will enter army service. Dr. Levy holds a captain's commission.

Lieutenant V. A. Hutton of Florence left April 20 for training at Fort Riley.

The death of Dr. F. G. McKlveen of Denver occurred April 22 at St. Anthony's hospital. The cause of death was pneumonia. The funeral, held April 25 from the residence, was largely attended by Denver doctors.

St. Joseph's Hospital, Denver, is to install a marble slab on which will be carved the names of doctors and nurses who have enlisted in army service from that institution—fifty-five in number to date.

Announcement has been made that during the absence of Dr. Robert Levy in the military service, his practice will be conducted by Dr. Stanley B. Eichberg.

Dr. Melville Black of Denver wishes it to be clearly understood, in spite of a recent statement to the contrary by the Denver Post, that he is still very much alive. The report by our eminently trustworthy Denver newspaper was to the effect that Mrs. Melville Black, "widow of the late Dr. Melville Black", had been appointed superintendent of the surgical dressings department of the mountain division of the Red Cross. It is true that Mrs. Black has accepted the position referred to, on a voluntary basis; but the reference to her as a widow is, as Mark Twain would have said, greatly exaggerated.

Dr. Crum Epler writes that he has just returned from Chicago, where he attended the conference of state secretaries which met at the call of the Surgeon General for the purpose of discussing ways and means of securing immediately additional enlistments from among the medical profession. The meeting was quite satisfactory, thirty-seven states being represented and all voicing their views. A plan was outlined whereby direct action can be had, and it is believed that much good will result and that the medical men will soon fill the gap in the Reserve Corps.

The death of Adjutant General John Chase of Denver occurred May 3, 1918. Dr. Chase was born in 1856, and graduated from the University of Michigan in 1881 with the degrees of A.B. and M.D. After practicing several years in Detroit in the specialties of eye, ear, nose and throat, he spent some time in study in London and Paris. After later settling in Denver he developed an extensive practice in his specialties and also became widely known through his activity in the National Guard of Colorado, which he helped to organize and of which he was adjutant general from 1909 to 1915. He was one of the organizers of the Gross Medical College and was for many years identified with medical teaching. Of his family, his wife, three daughters and two sons are left, the sons, Dr. John Chase Jr. and David Chase, being now in army service.

Medical Societies

BOULDER COUNTY.

Boulder County Medical Society met in regular session at the Boulderado hotel, March 7, 1918.

Dr. J. S. Bouslog's resignation as secretary and treasurer of the society was accepted and Dr. F. G. Swartz was elected in his place.

Dr. Queal reported two cases treated by applying paraffin. The paper of the evening was given by Dr. O. M. Gilbert on War Work of the Army Tuberculosis Boards. He found the best method in examining the patient was not to have him breathe deeply, as it brings out rales which are not of tuberculous origin. The patient is told to exhale nearly all the air, then give a little cough at the end and breathe. He found that the Indians were best to cooperate. The moist rale was the criterion for basis for exemption and rejection. The cigarette smoker is the most difficult case to deal with and often gives unilateral rales. About one per cent are discharged and three to four per cent held for further observation.

F. G. SWARTZ, Secretary.

The regular meeting of Boulder County Medical Society was held at the Physicians' building, March 21, 1918.

The meeting was preceded by an informal dinner at which the society had as guests Dr. R. C. Whitman and Dr. C. E. Edson of Denver. Dr. C. L. LaRue, president, was in the chair.

The regular order of business was dispensed with and the paper of the evening was read by Dr. R. C. Whitman. The paper was on Cancer Genuses and was discussed by Dr. Ramaley and Dr. Clay Giffin.

Dr. Edson addressed the society on the Suppression of War Rumors from the Standpoint of the Organized Medical Profession. Dr. O. M. Gilbert was appointed as local member to trace down and discredit rumors.

F. G. SWARTZ, Secretary.

The regular meeting of Boulder County Medical Society was held at the Boulderado Hotel, April 18, 1918. President C. L. LaRue was in the chair.

An excellent paper by Dr. Robert Lewis, Ph. D., of the University of Colorado, was read. The paper was on The Chemical Analysis of Blood in Relation to Kidney Impairment. He also demonstrated a colorimeter which was devised by himself and Dr. Alvin Peebles. The chief points of recommendation for this instrument are its simplicity, accuracy and low cost. Dr. Lewis dwelt on the increased efficiency possible to physicians who made use of the later blood tests in treating nephritic cases and the possibility of a very early diagnosis in these cases as compared with the diagnosis possible when routine urine examination only was employed. The paper was discussed by Drs. Clay Giffin, Queal, LaRue and Gilbert.

Dr. L. M. Giffin brought up the matter of reporting venereal diseases as required by the new state board regulations. This was discussed by Dr. Jacob Campbell and Dr. Clay Giffin, and all members present pledged themselves to support these regulations.

F. G. SWARTZ, Secretary.

CITY AND COUNTY OF DENVER.

The regular meeting of the Medical Society of the City and County of Denver was held April 2, 1918. President Moleen was in the chair. Dr. Jean B. Clow and Dr. Charles N. Needham were elected to membership.

Resolutions were read by Dr. C. G. Hickey upon the death of Dr. Rolandus G. Walker, which were adopted.

Dr. C. E. Edson came before the society in behalf of the Colorado State Committee of the Council of National Defense, to ask the co-operation of the doctors in action against German propaganda. It is desired that the doctors keep themselves posted and be able to deny false statements. Information comes from Washington that Germany is supposed to be spending about \$500,000 per month to start propaganda in this country.

The secretary then read the letter sent our senator, Mr. Shafroth, asking his support for the Owen-Dyer bill, and his reply that he would look into the matter.

The rest of the society meeting was given over to the discussion in five-minute talks of "The Organized Relief and Care of Discharged Tuberculous Soldiers".

Discharged Tuberculous Soldiers.

Dr. Henry Sewall, who spoke first, said the new tuberculosis camp which was to be situated here was going to be a deadly menace to the community unless it was handled carefully. Under proper management there will be a large opportunity for a great advance in the science of medicine in the next five years.

Dr. E. E. Kennedy, Secretary of the State Board of Health, said he disliked to ask for services to be rendered without compensation, but he thought doctors, as a part of patriotism, should all contribute their services to the care, diagnosis, and treatment of these returned soldiers. His plan for their care was to have the work carried on by the three following committees: The Provisional, Advisory, and Follow-Up Committees.

The next speaker, Dr. A. S. Taussig, said the government was not going to take any responsibility for the care of soldiers returned in the first three months because of tuberculosis, unless it was certain the disease was contracted during active service in the army. Therefore the work must be taken up by the state.

Dr. E. Friedman said any one who had ever had tuberculosis should not be accepted for army service. He thought a previous latent focus could be fanned into activity by the intensive training, especially after an attack of one of the infectious diseases so prevalent in the camps.

The chairman of the advisory committee appointed by the State Board of Health, Dr. C. N. Meader, gave an exhaustive review of the subject in connection with handling these returned tuberculous soldiers. The committee expect to classify returned soldiers according to the following points: Resident and non-resident; those having tuberculosis and those with a mistaken diagnosis; those dependent upon the state and those able to care for themselves; those dismissed without government responsibility and those with government aid. He also discussed in full those needing advice, the ambulatory cases, and bed-ridden cases, the advisability and mode of civilian relief, dispensary treatment and sanatorium treatment. He suggested preparing a card to hand to each returned soldier. This

card is to contain the information as to where to apply for care.

The next speaker, Dr. M. I. Marshak, in his talk seemed to feel that the government should care for these discharged cases, especially those retained for more than ninety days. He said France had established stations back of the lines where many who were thought to be tuberculous were kept for observation. Many of these were able to return to the front lines and to endure the hardships as well as the other soldiers. Canada has cared for all cases dismissed from her army because of tuberculosis. She also is training them for new work.

Dr. Saling Simon thought many cases of healed tuberculosis got better under military training instead of breaking down. He thought those with the latent focus and even cases which had been well advanced stood military life very well. He emphasized the fact that it is the recent cases of tuberculosis that do not stand military hardships.

Miss Edna Collins, Secretary of the Denver Chapter of the Civilian Relief Committee of the Red Cross, who was present, spoke of the work of that organization.

There was a short discussion by Drs. C. G. Hickey, C. D. Spivak, and Mary E. Bates.

MARY R. STRATTON,
Reporter.

The Medical Society of the City and County of Denver held its regular meeting April 16, 1918. President Moleen presided.

Dr. T. E. Carmody presented a woman on whom he had operated for sarcoma. He replaced a piece of the mandible with a resection from the rib. The result was excellent. He also showed a boy upon whom he had operated for a double harelip and cleft-palate.

Dr. H. G. Wetherill discussed the methods of bone grafting.

The president appointed Dr. G. M. Blickensderfer to take the place on the board of censors made vacant by the death of Dr. R. G. Walker.

Dr. H. G. Wetherill came before the society in the interests of the Medical Reserve Corps.

The coming address of Major Harry D. Jump on May 1st at the Brown Hotel was called to the attention of the society by Dr. Shere.

Capt. Hanna of the British army in his talk said, as all retired physicians had been pressed into service, there was no shortage of doctors in England. Pneumonia in the army had been lessened by closer watching and early care.

A report of a case of double pneumothorax was next given by Dr. M. I. Marshak. He followed this by showing some interesting X-ray plates of another case. The discussion was by Drs. Arneill, Shere, and Beggs.

Dr. C. B. Van Zant spoke on "Pneumonia in the Cantonments". He had inspected the conditions at both Camp Zachary Taylor and Fort Logan. The hospital at the former place occupied a space as large as twelve city blocks. Its laboratories and operating rooms were as well equipped as those in Denver. The pneumonia wards had comfortable beds which were separated from each other by sheets.

In the early fall the pneumonia was of the ordinary acute lobar type. There were thirty or forty cases with one death. About the first of November following the measles the pneumonia was of another type due to a strain of streptococcus. This had a high mortality. The middle of December another variety of pneumonia appeared due to a strain of hemolytic streptococcus.

It was mostly double and there was a severe general infection with many complications. Thirty-one per cent developed empyema of which twenty-two per cent died. In some cases pus had been found within an hour from the initial chill but mostly in six, eight to twenty-four hours. It was first treated by the resection of a rib and open drainage. Then by intercostal puncture and drainage by pump into water. Later by irrigation with Dakin's solution. The last was the most satisfactory treatment. At Fort Logan they are now dealing with this same kind of infective pneumonia with its high mortality.

Dr. J. R. Arneill, who has returned from Camp Bowie, said they experienced the same kind of an epidemic there with high mortality and large percentage of empyema. He said at Fort Riley, where they also had had an epidemic, they had been using frequent aspirations of the chest for relief of the empyema. He spoke of a combination of a serum and a vaccine which was giving some immunity and which might be of aid next year.

Dr. O. S. Fowler then showed a new clamp he had made to use on rectal valves.

MARY R. STRATTON,
Reporter.

LAKE COUNTY.

The regular meeting of the Lake County Medical Society was held in the offices of Dr. A. J. McDonald, February 1, 1918. The following were present: A. J. McDonald, B. F. Griffith, H. A. Calkins, E. A. Whitmore, J. A. Jeannotte and J. C. Strong.

A. J. McDonald read a very interesting paper on Fractures of the Skull. The doctor made his paper more interesting by reporting a case that was recently under his care. Upon operating he found, in addition to a large blood clot, a rupture extending deep into the cerebrum. E. A. Whitmore and H. A. Calkins discussed the paper. Dr. Whitmore confined his remarks to diagnosis and complications; Dr. Calkins his mostly to treatment. B. F. Griffith reported several cases of measles of mild character, the disease being now epidemic in the city. J. A. Jeannotte presented a case of nephritis with dropsy. This case was discussed by B. F. Griffith, who also reported two cases that were improving nicely under treatment. Dr. Whitmore also reported a similar case that he had under treatment. After adjournment Dr. McDonald's daughters, Miss Mary and Miss Florence, entertained the society with a musical program following which a lovely lunch was served. An unanimous vote of thanks was extended to the girls for their excellent entertainment.

J. C. STRONG,
Secretary.

The regular meeting of the Lake County Medical Society was held in the offices of Dr. J. A. Jeannotte March 7, 1918. The following officers and members were present: J. A. Jeannotte, B. F. Griffith, A. J. McDonald, E. A. Whitmore, H. A. Calkins and J. C. Strong.

J. A. Jeannotte read a very excellent paper on Diagnosis and Treatment of Pneumonia. In the consideration of diagnosis the doctor brought out several points that will not be found in text-books, points that he had gathered in his thirty-odd years in practice. Under the subject of treatment he went into detail, showing the difference in treatment in high and low altitudes. The doctor is convinced that treatment is as efficacious

here as in a lower altitude and proves it by his case reports. The paper was discussed quite at length by A. J. McDonald and B. F. Griffith. Both were sure that pneumonia would respond to treatment as well here as in a lower altitude, as their mortality rate for pneumonia is lower than that given in the mining districts of Missouri and Michigan. H. A. Calkins presented a patient with fracture of thigh that he had operated upon and gave a report of the case, showing X-ray plates. After adjournment the society was served a delightful lunch, Dr. Jeannotte's niece, Miss Therese LaRocque, being the charming hostess.

J. C. STRONG,
Secretary.

COLORADO OPHTHALMOLOGICAL SOCIETY.

The regular monthly meeting of the **Colorado Ophthalmological Society** was held in Denver, March 16, 1918, Dr. David A. Strickler presiding.

Dr. W. F. Matson presented a case showing a penetrating eye injury. The case was discussed by Drs. W. C. Bane, Edward Jackson, E. T. Boyd, F. R. Spencer and E. R. Neeper.

Dr. Edgar F. Conant presented a patient with corneal ulcers. This case was discussed by Drs. E. R. Neeper, E. T. Boyd and F. R. Spencer.

Dr. Wm. C. Bane presented a case of eye injury, which was discussed by Drs. Geo. F. Libby, W. H. Crisp, Edward Jackson, E. R. Neeper, H. W. Aufmwasser, E. T. Boyd, W. C. Bane and E. M. Marbourg.

Dr. H. R. Stilwill presented a case showing hole in macula. Dr. Stilwill's case was discussed by Drs. Edward Jackson and Geo. F. Libby.

Dr. Edward Jackson presented a man showing entropion of lower lid.

Drs. Melville Black and E. T. Boyd presented a patient showing congenital dislocation of lenses. This case was discussed by Drs. F. R. Spencer, W. H. Crisp and Edward Jackson.

Dr. E. E. McKeown presented a case of exophthalmos due to ethmoidal disease, and this was discussed by Drs. E. M. Marbourg, F. R. Spencer, Edward Jackson and H. R. Stilwill.

Dr. D. A. Strickler presented a case of iridocyclitis, and the case was discussed by Drs. W. H. Crisp, Geo. F. Libby and Edward Jackson.

Dr. H. R. Stilwill made a subsequent report on a case of tuberculous scleritis, shown at the February meeting.

Dr. E. E. McKeown reported two cases of eye injury.

Dr. E. M. Marbourg reported a boy with a wood splinter in orbit.

For a detailed report of the transactions, see the *American Journal of Ophthalmology*.

FRANK R. SPENCER, Secretary.

Book Reviews

Clinical Lectures on Infant Feeding. By Lewis W. Hill, M.D., Children's Hospital, Boston, and Jesse R. Gerstley, M.D., Michael Reese Hospital, Chicago. 12mo. of 377 pages illustrated. Philadelphia and London: W. B. Saunders Company. 1917. Cloth, \$2.75 net.

This interesting work on infant feeding gives both the Boston and Chicago methods. The first part of the book is composed of the Boston ideas given by Dr. Hill. This method is distinctly a percentage method. The calories are also calculated to ensure the proper amount of food energy. Two methods of modifying milk are

used in Boston. The first: Gravity cream and skimmed milk diluted by water with the addition of lime water and milk sugar to make the proper percentage of food elements in the mixture. The second: Whole or skimmed milk diluted by water with the addition of milk sugar. The latter method is for older children and for the use of those too ignorant to follow the former. The author discusses the feeding of normal babies all through their babyhood, including also the feeding of premature infants. He devotes some space to the proprietary infant foods, giving an analysis of their contents and calling attention to their good points and deficient food values. Following this he takes up the difficult cases of feeding, indigestion, and constipation, speaking of the character of the stool. A whole lecture is then given to the diarrheas of infancy and their management. The next two lectures cover pyloric stenosis, pyloric spasm, intussusception, acidosis, rickets, scurvy, and spasmodophilia. These lectures are followed by clinics which show his methods of caring for and feeding infants.

The second part of the book consists of lectures and clinics given in North Carolina by Dr. Gerstley in which he gives the Chicago ideas in reference to the feeding of infants, these being based upon the foundation work done by Czerny and Finkelstein in Europe. He discusses and compares the values of different milks and then goes into the modern conception of the disturbances of nutrition. He then takes up the food disturbances under Finkelstein's classification: Failure to gain, dyspepsia, intoxication, and decomposition. In his lectures on these subjects Dr. Gerstley deals with the different elements in the feeding, such as sugar, fats, whey, and starches, and with how they cause disturbed balance. He also gives the symptoms and management of these conditions. The author is ready in his next lecture to treat the subject of disturbed nutrition or balance due to causes independent of food. He mentions heat and nervous influences. This subject he divides into parenteral infections, infections outside the intestine, and enteral infections, as diarrheas due to infection. He gives the feeding and treatment for each condition. In his next lecture, he speaks of the artificial feeding of the normal infant. The middle west does not practice the percentage methods used in the east. Chicago's method of modification is the simple dilution of whole milk by water with the addition of sugar in the form of maltose. The food is arranged to suit the baby with reference to the elements which may cause disturbed balance, as sugar, whey, and the fats. The milk is boiled and care used as to the quantity. Orange juice and mixed feeding are used early. Dr. Gerstley considers the "weight is the index of the condition; the stool is only a symptom". Following artificial feeding he speaks of breast feeding and then of disturbances in the breast-fed. This is followed by clinics which illustrate the care and feeding of infants.

The entire book is an excellent work on infant feeding and contains much of value and information for the physician.

M. R. S.

Diseases of the Chest and the Principles of Physical Diagnosis. By George W. Norris, M.D., Assistant Professor of Medicine in the University of Pennsylvania, and Henry R. M. Landis, M.D., Assistant Professor of Medicine in the University of Pennsylvania, with a chapter on the Electrocardiograph in Heart Disease, by Edward

B. Krumbhaar, Ph. D., M. D., Assistant Professor of Research Medicine in the University of Pennsylvania. Octavo volume of 782 pages with 413 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$7.00 net. Half Morocco, \$8.50 net.

This most admirable volume is divided into four parts; the first two by George W. Norris on "The Examination of the Lungs" and "The Examination of the Circulatory System"; the last two by H. R. M. Landis on "Diseases of the Bronchi, Lungs, Pleura and Diaphragm" and "Diseases of the Pericardium, Heart and Aorta". Incorporated in part two is a short but excellent chapter on the Electrocardiograph by Edward B. Krumbhaar.

The book is dedicated to George Fetterolf, Assistant Professor of Anatomy of the University of Pennsylvania, whose name occurs frequently in the text. This distinguished anatomist by the method of frozen serial sections of the cadaver and by close cooperation with the clinician has helped to throw much light upon the underlying anatomical basis for many normal and pathological physical signs.

Close study leaves little for unfavorable criticism. Issue may be taken with the statement that "The x-ray is rarely of much use as an early diagnostic method in cardiac or pulmonary disease". Lawrason Brown, expert clinician and student of the roentgen ray in the diagnosis of pulmonary tuberculosis, wrote recently: "I cannot urge too strongly that roentgenograms be taken of at least 10,000 men of the National Army". Of one thousand men of the New York National Guard examined by the x-ray by Dr. Lewis Gregory Cole, thirty-four were considered tuberculous from the plates. Upon physical examination by a "group of good clinicians" only one of these cases was discovered. At any and all stages of pulmonary tuberculosis much valuable information may be gained from stereoscopic plates.

It is not generally accepted that abscesses in and about the ischiorectal fossa are usually tuberculous. No less an authority than Gant, before the Medical Society of the City and County of Denver, a year ago stated that very few of them are tuberculous, not more than fifteen to twenty per cent.

Landis evidently favors other forms of anesthesia than ether for phthisical subjects. It is curious to note that ether is preferred in Colorado by many able physicians and surgeons.

On page 278 the statement is made: "In the vast majority of instances what is taken for delayed resolution is in reality an effusion". Too often encapsulated empyemata are overlooked. However, "delayed resolution" is not delayed resolution at all. It probably never occurs as such but the misnomer is applied to a developing condition in which there is a deep-seated more or less permanent establishment of the infection, usually pneumococcic, in the bronchial tubes, leading ultimately to chronic bronchitis or bronchiectasis.

Severe attacks of coughing are still considered to exert sufficient pressure inside the bronchi to cause their dilatation. Coughing causes pressure on the outside of the bronchi as experiments have demonstrated. MacCallum thinks the most plausible explanation of bronchiectasis is an inspiratory dilatation whether exerted directly or through the imprisonment of inspired air behind some obstruction. This was the original conception of Laennec.

Bare mention is made of the method of brachial artery compression in revealing alternation of the pulse. Among others Hoffman, Gravier, Herrick,

McGill, White and Lunt have all written of the great value of this method. White and Lunt, the latter a member of the Medical Society of the City and County of Denver and now a captain in the Medical Reserve Corps, consider it impractical in the post-premature beat type of alternation, which comprises seventy per cent of their cases, because of the intervals elapsing between the appearance of the premature beats at the wrist. They call attention also to a bigeminal pseudo-alternation occurring once in every six cases and, finally, note the great usefulness of the method in the grave type of constant alternation.

The usual text book is too frequently a compilation of ancient literature. This volume is refreshingly different. The illustrations are many, excellent and most instructive. Typographical errors occur perhaps more frequently than in the average Saunders' publication, e. g., errors will be found on pages 12, 58, 73, 76, 464, and elsewhere. One is reminded of Howell's Text Book of Physiology in three particulars: First, the easy style, second, the unusual amount of original matter embodied, and third, the many references and foot notes for every statement of importance divergent from commonly accepted notions. The fundamental basis of the book has been scientific investigation, anatomical and physiological.

J. J. W.

Tumors of the Nervus Acusticus and the Syndrome of the Cerebellopontile Angle. By Harvey Cushing, M.D., Professor of Surgery at Harvard University. Octavo of 296 pages with 262 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$5.00 net.

The book is very complete, easily read and most interesting. It becomes still more readable because of its unusual form. It is divided into several different parts. Taking up the historical considerations first, it gives some very interesting cases occurring in the period from 1810, when Leveque Lasauree made his report, to 1853, when Toynbee gave the first authentic description of an early tumor. From this up to the year 1890 very little was done, but in the following ten years rapid strides were made through the work of Luciani, Ferrier and Turner.

Next is considered the clinical material, amounting to several hundred cases, which has been derived from two different sources: Baltimore and Boston. With the further working out of these cases, the verifying of the tumors was accomplished in a little better than sixty-one per cent of the cases. The cases were divided into two classes according to the tumor's location in the head. Those in the forebrain were more than double those found in the hindbrain. In the clinical reports cases occurring both at hospital and in private practice have been given. They are not long detailed accounts, but only the essential parts are noted, and consequently these records are not at all dry or uninteresting and give the reader the facts without a great deal of reading.

In the comments on cases in these reports the author is very frank in stating what the outcome might have been, had he known just what to expect. He explains why some of the operations were not successful and what the outcome ought to be in future cases. The results from the Boston cases were more gratifying than from the other series, the preliminary examinations having been made complete by the aid of the x-ray and the Barany tests. The case reports are made up under the following heads: Chronology of Symptoms, Positive Neurological Findings, Clinical

cal Diagnosis, Post-Operative Notes, Subsequent Notes, Pathological Findings, and finally the Comment, which helps the reader in forming a conclusion about the case. The symptomatology is given quite a prominent place, starting with the auditory and labyrinthine signs and the possible disorders from cranial nerve involvement. The sub-occipital discomfort and general pressure symptoms are next considered.

Diagnosis is also given an important part in this book, the usual examination being taken up with the addition of the Barany tests and x-ray examination. The x-ray helps in locating some of the tumors, but in a great many cases nothing is revealed until evidence of increased pressure appears.

The part dealing with surgery takes up the methods of approach, including the unilateral, bilateral and trans-labyrinthine. The anesthetic is one of the most important things to consider, and should not be undertaken by unskilled hands. The usual preparation of the field for operation is made, such as shaving and the using of green soap, alcohol and bichloride. The author "abhors the use of iodine".

The book is profusely illustrated with macroscopic and microscopic cuts of tumors, and photographs of patients before and after the operation showing the swelling caused by the growths and the healed wounds later on. The drawings, giving every step of the operative procedure, are decidedly helpful.

This book can be most heartily recommended for the brain surgeon, neurologist and otologist.

E. E. McK.

The Spleen and Anaemia. Experimental and Clinical Studies. By Richard Miles Pearce, M.D., Sc.D., Professor of Clinical Research Medicine; with the assistance of Edward Bell Krumbhaar, M.D., Ph.D., Assistant Professor of Research Medicine, and Charles Harrison Frazier, M.D., Sc.D., Professor of Clinical Surgery, University of Pennsylvania. Cloth. Price \$5.00. Pages 419, with 16 illustrations, in color and black and white. Philadelphia and London. J. B. Lippincott Company, 1918.

Written in a most interesting style, the book will be welcomed by both physician and surgeon. In this volume, splenectomy is considered, first as a means of studying experimentally in animals the relation of the spleen to blood destruction and regeneration, second, as a therapeutic procedure in the treatment of disease of man accompanied by anemia. The emphasis is on the side of the red blood cell, and the relation of the spleen to the quantitative and qualitative changes which the red cell may undergo. The first part deals with experimental studies, by R. M. Pearce, a general summary of which reveals three prominent phenomena after splenectomy: First, an anemia of the secondary type which usually reaches its severest stage after one and a half months; second, an increased resistance of the red blood cells to hypotonic salt solution, hemolytic serum, saponin and cobra venom, and mechanical shaking; third, a lessened tendency to hemoglobinemia and jaundice. Part two deals with clinical studies of the splenomegalies and of the results of splenectomy in man by Dr. Krumbhaar. These chapters bring into one volume for the first time the modern views concerning the classification, diagnosis and treatment of the non-infectious splenomegalies characterized by blood destruction. The final section by Dr. Frazier gives details of the technic of the operation of splenectomy in man.

The illustrations deserve special mention, being in every instance well done; this in part attributable to the excellent grade of paper employed by the publishers. A bibliographical index of great value concludes this excellent volume.

J. L. M.

Diseases of Women. By Harry Sturgeon Crossen, M.D. Fourth edition, revised and enlarged with eight hundred engravings. St. Louis, Mo. C. V. Mosby Company, 1917.

This volume on the diseases of women consists of eleven hundred sixty pages and is probably the most complete of its kind in print. However, one should not confuse this work with Crossen's operative gynecology which is his masterpiece. This is not primarily a surgical treatise of the topic, it is a complete rounding up of the entire subject in its utmost detail. All of the normal and abnormal conditions peculiar to the subject whether anatomical, physiological, embryological or pathological have been divided and sub-divided until each is discussed under a headline of its own. Although this book embodies the subject in its entirety, the tiresome, useless, long-drawn-out discussion usually indulged in by a great many authors has been sedulously avoided in this work. It is a reference book for busy gynecologists, not for the student, not for the operator. The information sought along gynecological lines is easily found on account of the proper grouping of the subjects, the employment of the easier methods of outlining the various topics and the heavy headlining of each important subdivision. The photo-engravings in this volume far exceed anything of their kind today in number and in quality, many of which are vivid illustrations of gynecological pathology. The chapter on the ductless glands in their relation to gynecology is a distinct addition to the subject of women's diseases, so far as text-books are concerned. The book is the work of one who is an artist-expert in his line, and deserves a great deal more commendation than can be given here. It contains a wonderful store of knowledge, presented in a style which is attractive and easy.

L. J. W.

Practical Materia Medica and Prescription Writing. With illustrations by Oscar W. Bethe, M.D., Ph.G., F.C.S., Assistant Professor of Materia Medica and Instructor in Prescription Writing, Tulane University of Louisiana. Formerly Professor of Chemistry and Professor of Pharmacology, Mississippi Medical College, etc. Second revised edition. Philadelphia: F. A. Davis Company, publishers; English depot, Stanley Phillips, London.

The book is divided into two parts, the first dealing with drugs, the second with prescription writing.

In the latter part of the book considerable space, often one or two full pages, is used to show an improperly written prescription and its correction. This space could have been more profitably employed, in more fully describing the pharmacology of the drugs in the first division.

To sum up the physiological action of digitalis as "heart tonic and stimulant diuretic" condemns the work as a text-book and, with our present knowledge of the pharmacologic action of so important a drug, makes it of small value to the practitioner.

Poly-pharmaceutical prescriptions from various authors are embodied in the text, offered probably as suggestions rather than to be memorized or copied. The statements made are sufficiently

up to date, but too brief for rational therapeutic application.

With so many excellent works giving a detailed description of the action and use of drugs, it seems to the reviewer, that nothing has been added to our knowledge of therapeutics by this work, while the presentation is neither interesting nor novel.

M. K.

New and Nonofficial Remedies, 1918, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1918. Cloth. Price, postpaid, \$1. Pp. 452 + 26. Chicago: American Medical Association, 1918.

This book lists and describes the proprietary remedies which the Council on Pharmacy and Chemistry has examined and found to conform to rules for acceptance and publication in *New and Nonofficial Remedies*. It also describes the newer nonproprietary and unofficial medicaments which, in the opinion of the Council, give promise of having some real therapeutic value. The description of each article aims to give a statement of its pharmacologic actions, its therapeutic uses, with dosage, the physical and chemical properties, and tests for controlling its identity and purity. Articles of similar composition are grouped together. In most cases each group is preceded by a general article which compares the composition and actions of the members of a group with each other and with the established drugs they are intended to supplant. Those who desire trustworthy information in regard to the newer drugs should have a copy of this annual.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1917. Cloth. Price, postpaid, 50 cents. Pp. 169. Chicago: American Medical Association, 1918.

This volume contains the reports of the Council which were adopted and authorized for publication during 1917. These Council Reports discuss the articles which were examined and found to be in conflict with the rules for admission to *New and Non-official Remedies*. It also explains why certain preparations, included in the last edition of *New and Non-official Remedies*, have been omitted from the present 1918 edition. Those who wish to be informed in regard to proprietary remedies should have the annual Council Reports in addition to *New and Non-official Remedies*.

New and Nonofficial Remedies. During April the following articles were accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with *New and Nonofficial Remedies*: Merck and Company: Cresol-Merck, Guaiacol carbonate-Merck, Quinine dihydrochloride-Merck, Quinine and urea hydrochloride-Merck, Thymol iodide-Merck.

The Supreme Court Decision On the Corporate Rights of the American Medical Association. In 1910 the state's attorney of Cook County, Chicago, was petitioned to institute "quo warranto" proceedings against the American Medical Association

on the ground that the Association's affairs were being conducted illegally in that its officers were elected at annual sessions held outside of the state of Illinois. In December, 1915, the Supreme Court of Illinois ordered the Circuit Court to take up the question of whether or not Illinois corporations "not for profit" are compelled to hold their elections and conduct their business within the confines of the state. After several lower court decisions favorable to the Association, the case was carried to the Supreme Court of Illinois, which on April 16, 1918, rendered a decision entirely satisfactory so far as the Association is concerned, and one paragraph of which reads:

It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the State of Illinois, composed of delegates selected by the constituent associations, for the transaction of business of the corporation, it is not unlawful to authorize and provide for the election by said house of delegates of trustees of the corporation. The American Medical Association was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the association throughout the United States, by delegates selected by the constituent associations from the various states in the Union. Such authority to the house of delegates is conferred by the by-laws and is not in conflict with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit.

Pulmonary Abscess Treated by Artificial Pneumothorax. In the April number of the *American Review of Tuberculosis*, Simon and Swezey of Denver report a case of pulmonary abscess treated by artificial pneumothorax after an unsuccessful attempt at aspiration. After the first nitrogen injection the temperature fell rapidly. After the second treatment all symptoms disappeared and the temperature remained normal. The expectoration increased after the first injection to about four times the previous quantity. The leucocyte count and the percentage of neutrophils dropped gradually while the patient's weight and strength increased. The authors consider this method of treatment a most desirable one in cases of lung abscess, especially where the abscess communicates with a bronchus. They recommend that it be further employed in the treatment of bronchiectatic cavities.

Opposing arguments about the effect of the war upon mental and physical qualities of the future generations of the races engaged are that, on the one hand, physically weak and degenerate men will be the fathers of the future generations and beget degenerate offspring; and, on the other hand, that the females being in great preponderance over males, selection will be more careful and better progeny result on that account. It is thought both these influences will operate with more or less balance. The question is comparable to that of whether business will be good or bad after the war and the answer is yes or no.

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Editorial Comment

PREVENTION OF VENEREAL DISEASE.

War drags to light the problems of civilization, and focuses on them the attention they deserve but never get in time of peace. Some of these problems are medical, and one of the greatest is the control of venereal diseases. Millions of young men are brought together by the draft; and the dangers which beset them also in civil life, although greater than those of war, for the first time begin to attract attention.

In his address before the last meeting of the American Public Health Association, Surgeon General Gorgas pointed out that merely for the purpose of keeping in the line the largest and most efficient fighting force, the eradication of venereal disease would be worth more than some magic wand by which every wounded man could be cured and got back into line at the end of the second day.

The statistics compiled for the Council of National Defense show that in the armies of the United States there are five times as many cases of venereal disease as of the other communicable diseases, pneumonia, dysentery, typhoid, paratyphoid, malaria, meningitis, and scarlet fever all put together. In twelve weeks there were reported from thirty-one cantonments, 21,742 new cases of venereal disease; and to keep these men, aside from the loss of their time and their permanent disabilities, cost more than to maintain Camp Dix with 20,859 men training in it.

When confronted by the facts in this form the most confirmed advocate of *lais-*

sez faire admits that something ought to be done. Yet these figures understate rather than exaggerate the evil. Among the young men registered, but not called in the first draft, it is estimated there were four thousand syphilitics in Colorado; and five times that number who had gonorrhea. Of the cases of recent syphilis seen at the cantonments, in a very large proportion the disease was contracted before the young men were brought under military discipline; and in practically all the others it has been contracted when the men were on leave of absence from camp. The venereal disease in the army is only a diminished representation of the venereal disease prevalent in civil life.

To protect our soldiers from this their greatest danger much is being done. Since the days when armies first began to disseminate these diseases, there has never been an army so well guarded against their ravages. If it were possible to guard them from the patriotic communities adjoining our cantonments the problem would be almost solved. For the week ending May 10th, 1918, the cases of venereal disease reported gave an annual rate of 270.9 per thousand in the National Army in America and of 35.1 per thousand for our expeditionary forces. In the former the venereal cases were three times as many as all others put together; in the latter, one-fifth less than the admissions for other diseases.

It is now fifty years since the work of Pasteur, Klebs and Koch began to point the way to the prevention of all communicable diseases, not only those that cause one-fifth of the sickness in our armies but those that cause the other four-fifths. The way is prevention of exposure. Twenty-

four years ago (Philadelphia Polyclinic, 1894, page 227) the writer discussed the subject thus:

"In the present disposition of sanitarians to secure the health of the community at the cost of the privacy and personal liberty of the individual, it is somewhat strange that the systematic registration of all cases of syphilis has not, ere this, been strongly and persistently urged.

"Nearly all the reasons which have been held to justify the adoption of rules requiring the physician to promptly report other contagious disease apply with equal or greater force in case of syphilis. There is no question in any quarter as to the contagious nature of the disease. It is as certainly and definitely recognizable as the other eruptive fevers, at least during the period of possible transmission. And, while with it surveillance would need to be more prolonged, and quarantine, in some respects, would be more difficult than with many other affections, yet in these respects its management would be quite as simple as that of tuberculosis and leprosy.

"Nor would such a measure be without its precedents, for every attempt at the registration, inspection and isolation of prostitutes has been justified solely as an effort to limit the spread of venereal disease. That such attempts have uniformly failed to accomplish their purpose is not to be wondered at, when it is considered that the attention was confessedly limited to less than half of the cases that occurred.

"Probably no more incomplete and imperfect measure of proposed sanitary administration than the so-called regulation of prostitutes was ever suggested or listened to. If measures for the prevention of the spread of syphilis and gonorrhea be adopted or seriously considered in the future, they should, at least, conform to the first requirement for any such sanitary measure, and deal with all cases, since every case is presumably a focus of certain infection, and experience has demonstrated that any less radical measure is worse than useless.

"Of course, a proposition of this sort need only be mentioned to awaken the most violent objections. And its execution would

doubtless be met with bitter and persistent opposition on the part of male syphilitics, and their professional advisers. Yet when we come to consider the reasons that such opponents could offer against it, we find them equally applicable to the registration of any contagious disease; and there appears no reason why they should be given a peculiar consideration and weight when urged on behalf of this particular class of sufferers. Incidentally, such a registration would be of more extended educational and preventive value in connection with this disease than in regard to most others; for with syphilis exposure is more generally due to individual ignorance and recklessness.

"Of course, what has been said of the registration of syphilis will apply with equal force with regard to gonorrhea, and the same objections would need to be met in the one case as in the other."

Under the exigencies of war this question of the reporting of venereal disease has been forced from the realm of academic discussion into that of practical governmental action. Even those who oppose it admit its legality as a war measure, while ignoring its necessity as a sanitary precaution in times of peace. The proposal not to talk about it but to put it into operation arouses the opposition early foreseen. (See our April number, p. 104). There are great practical difficulties to be met; perhaps new laws regarding the relations of physician and patient will be needed; and new safeguards as to the records of health departments. If there were not real and important obstacles to be overcome the reporting of venereal diseases should have been adopted before the reporting of diphtheria or smallpox.

Will the obstacles that arise prevent safeguarding the interests of the community, and the physical and moral welfare of the race? Are we to fight the most dangerous of endemics without exact knowledge of the location of the foci of infection, now that scientific discovery has revealed the causes of these diseases and the exact conditions of their transmission. We have boasted of triumphs over lesser evils like malaria, typhoid, yellow fever, smallpox. Shall the

greater dangers to health be left undisturbed?

At the Clinical Congress of Surgeons at Chicago last October, Secretary of the Navy Daniels spoke thus: "We are fighting for the safety of democracy. Victory is jeopardized by the preventable diseases which destroy the fighting strength of armies and navies. I call upon the medical profession, both within and without the Army and Navy, better qualified by knowledge and better equipped than any other body of men with influence and power, to assume leadership in this righteous crusade. Where you lead, government will follow, and the people will heed your direction when they will be deaf to the clarion call of all others".

These words voice the appeal of the nation, the appeal of the race to the medical profession. What shall be its answer?

E. J.

ANTIVENEREAL LEGISLATION IN ONTARIO.

Such is the complexity of the problems involved that it is doubtful whether the ideal law for the prevention of venereal disease has yet been written, if indeed it can ever be written. An act for this purpose which comes into force next month in the province of Ontario, Canada, contains, however, a number of carefully considered features the recital of which may be of service to those elsewhere who are engaged in the attempt to legislate the venereal curse out of existence.

In the first place any person under arrest or in custody charged with an offence against the criminal code of Canada or against any statute of Ontario or any local by-law may, if suspected, be examined as to the existence of venereal infection, and may further be subjected to the necessary detention and treatment. The medical officer of health may require any person who he is credibly informed has infected or is capable of infecting other persons with venereal disease to consult a legally qualified medical practitioner. Hospitals receiving aid from public funds must make proper provision for the examination and treatment of

venereal patients. No person other than a legally qualified medical practitioner may attend or prescribe for or supply or offer to supply any drug, medicine, appliance or treatment to or for a person suffering from venereal disease for the purpose of the alleviation or cure of such disease; this does not prohibit the dispensing of medicines duly prescribed. A very carefully worded section entirely prohibits, under heavy penalty, any form of advertising of means of treatment of venereal affections. A heavy penalty is also provided for any act which leads or is likely to lead to the communication of venereal disease by the offender. Privilege is definitely established for any communication made in good faith for the purpose of carrying out the provisions of this law. Proceedings for the recovery of penalties, except with regard to advertising, are to be conducted in camera, and are not to be published in any newspaper. The provincial board of health is given broad powers for the making of regulations under the law.

MILLIONS OF YEARS AGO.

The tragic human struggle of the past four years has occupied our minds so incessantly that it is a relief to turn our mental gaze even for a moment to a view of the extremely remote in the evolution of living things. When paleontologists tell us glibly of conditions that existed one hundred million years ago, the perspective borne in upon us is as refreshing as mountain breezes after the heat and sordid turmoil of summer in a great city. It is healthful at times to realize that man is but an infinitesimal speck in relation to space and eternity.

Paleopathology is a young branch of paleontology which has a number of interesting things to say about the antiquity of disease. In an interesting review (*The Surgical Clinics of Chicago*, volume 2, page 319) Moodie, while admitting that there is some difference of opinion as to the duration of life on this earth, assures us that a safe estimate of about one hundred million years may be accepted as the interval which has elapsed since the first appearance of life on our

globe. There is distinct evidence of the occurrence of disease during the last quarter of this time, or a modest period of twenty-five million years.

Bacteria, probably not pathogenic, are among the oldest known evidences of life, having been discovered by Walcott in decayed wood and the petrified feces of fish of the pre-Cambrian formations of North America. Bacterial cultures are frequently encountered petrified in silicon. Some bacteria are supposed to have been active in the deposition of calcium salts, so that the formation of limestones in which both bacteria and algae occur is believed to have arisen by the combined action of the algae and bacteria upon sea water.

The study of pathologic lesions among the fossil remains of the Pleistocene cave mammals of Europe was begun in 1875 by Rudolph Virchow, who described a case of spondylitis deformans in the vertebrae of a cave bear from Bavaria. It is interesting to recall that less than one hundred years ago the eminent English divine and naturalist, Buckland, Dean of Oxford, eloquently defended the idea that such remains as these were relics of the universal flood described in Hebrew tradition.

The bones of primitive man are found in association with the remains of the Pleistocene mammals; and it has been established that these primitive human bones were affected by caries, alveolar abscesses, fractures, arthritis deformans, spondylitis deformans, and other diseases. The study of paleopathology indicates that some at least of the diseases which prevailed many millions of years ago differed but slightly from the lesions of modern pathology.

Particularly subject to arthritic lesions was that delicate creature, *Diplodocus* the dinosaur, who lived in Wyoming sixteen million years ago, who measured nearly seventy feet in length, weighed approximately forty tons, and dragged his tail along the ground for a length of nearly thirty feet. Small wonder that a dress train of such length was unusually subject to injury! The bony lesions recognized in this and other vertebrates include osteoma, hemangioma, exostosis, and necrotic sinuses. The pres-

ence of bone syphilis and tuberculosis among fossil animals cannot be clearly established, but there is presumptive evidence of the existence of syphilis some five hundred thousand years ago.

Original Articles

REPORT OF CASES OF CONGENITAL DISLOCATION OF THE HIP.*

GEORGE B. PACKARD, M.D., DENVER.

The subject of congenital dislocation of the hip is important even though its occurrence is rare. The importance of its early recognition cannot be too strongly emphasized. The number of cases applying for treatment beyond the age when the best results can be attained shows that errors of diagnosis are frequently made, even though the subject has received considerable attention during the previous few years.

The diagnosis ordinarily offers very little difficulty. Lameness, dating from the time of the child's beginning to walk and unaccompanied by pain, shortening of the limb, the greater trochanter above Nelaton's line, these four points furnish the history in most cases of unilateral dislocation. Bilateral cases and the anterior types are more difficult of diagnosis, but the roentgen plates would plainly show the position of the head in these cases.

In 1829 Dupuytren, after a careful study of the anatomy of this deformity, regarded it as absolutely incurable and for sixty years this opinion was accepted. I well remember that, while I was serving as house surgeon in the New York Orthopedic Hospital, no attempt was made to do more for these cases than to apply a protective brace or overcome the shortening by the use of high-soled shoes.

Little interest was shown in the subject until 1890 when Hoffa of Berlin and Lorenz of Vienna became interested and advocated the open operation. The results not being very satisfactory, it was soon abandoned for

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

the bloodless method of reposition which was popularized by Lorenz. In 1902 he visited this country, but previously to this date, Bradford, Whitman and Ridlon had done a considerable number of these operations in this country and since that time the method has been resorted to very generally throughout the world.

In my series of cases which will now be reported, thirty-three were unilateral and thirteen bilateral, making fifty-nine dislocated hips in all.

My youngest case was twenty months old with a single dislocation, my oldest case was seven years and also unilateral.

Of these forty-six cases, five were male and forty-one female. Of the thirty-three single cases, twenty-four were anatomic replacements, eight anterior transpositions and one posterior. Of the twenty-six joints of the thirteen double cases, fifteen were anatomic replacements, eight anterior transpositions and three posterior. Both hips were in position in four cases. In seven cases one was in and one was anterior. In one case both hips were posterior and in one case one hip was posterior and one was anterior.

Of the fifty-nine reductions reported thirty-nine were anatomical cures, sixteen anterior transpositions and four posterior. Many of the cases of anterior transposition with good function are certainly good results and if these cases are added to the anatomical cures the results are very gratifying. Many cases of poor stability following reduction may remain with good position if sufficient care and attention are given to the dressing. When there is the slightest indication of a relaxation the dressing should be removed and the position changed at once to one of better stability.

With the exception of four of these cases, which are still under treatment, sufficient time has elapsed (from two to fourteen years) to form an opinion as to final results.

The Lorenz method of reduction was used in fifty hips and the Ridlon method in the last nine hips. I assume that the Lorenz method which is described in textbooks is familiar to those interested in the

subject. The resistance of the tissues is overcome by forcible stretching, particularly of the adductors which are massaged and stretched until they are thoroughly relaxed or torn from their attachment.

The Ridlon method differs from the former in many respects and I believe is more satisfactory, less likely to cause severe traumatism and gives better stability in the joint. He describes the method as follows: "The patient being completely etherized, the pelvis is raised on a sand-bag about three inches above the table; the assistant abducts the opposite thigh and tilts the pelvis down toward the table on that side; the operator grasps the flexed knee and flexes the thigh until with the fingers of the other hand on the head, neck and greater trochanter of the other side and the thumb in front of the acetabulum he feels the femoral head at the lower part of the acetabulum; if the head does not come low enough he rotates the thigh inward, and then abducts; the head rises upward and slips into the socket. The operator knows it is in because he can feel it under his thumb in front. If he cannot feel it, it is not in". The limb being held in position of greatest security is retained by the usual plaster dressing.

From this method of reduction I think there is much less danger of fracturing the femoral neck or injuring the sciatic nerve or blood vessels than from the Lorenz method.

Ordinarily the difficulty of reduction increases as the child's age advances, at the same time the muscular condition is also an important guide. It is generally difficult to reduce bilateral cases after six years and unilateral cases after eight. Reduction should not be attempted when the shortening exceeds two inches. Most of the accidents occur from an effort to increase the upper age limit, or in not recognizing the difficulties from marked shortening and rigidity. Two of my cases have suffered from paralysis of the muscles which are supplied by the peroneal nerve. Both were bilateral with marked shortening and difficult to reduce. The first one has entirely recovered and the second one is improving.

It has generally been considered that the

great majority of these dislocations are posterior and that the anterior and superior positions are very rare. My experience would coincide with the views of Dr. Ridlon who says he has examined hundreds of these cases and is positive that in almost all cases the dislocation is superior. The superior dislocations are those in which the head can be felt in front on outward rotation of the limb and at the back on inward rotation. In anterior dislocations the head can be felt in front, but not felt at the back when the limb is rotated inward. In posterior dislocations the head can be felt at the back but cannot be felt in front on outward rotation of the limb. He also remarks that few of the anterior dislocations remain in when replaced. Practically all the posterior dislocations give perfect results. Perhaps seventy-five per cent of the superior dislocations in unilateral cases remain secure when replaced. In bilateral dislocations perfect results in both hips are obtained in only about half of the cases. It is well to bear in mind the significance of these various positions as having important bearing on the stability of the joint and also on the subsequent treatment of cases that have not remained in position after reduction.

My experience does not indicate that a twist in the femoral neck, considered important by some writers, is a factor of any importance, as regards stability or success, but I believe the chief difficulty in this respect is the shallow acetabulum.

When one considers the history of this deformity, for many years regarded as absolutely incurable, and the results that can be obtained now by manipulative reduction, he surely appreciates the great advance that has taken place in the treatment of congenital dislocation of the hip.

216 Metropolitan Building.

DISCUSSION.

Henry W. Wilcox, Denver: I feel that such an instructive paper as that which Dr. Packard has presented should have recognition from this body. Lorenz certainly did a great service when he introduced the manipulative treatment of congenital dislocation of the hip, for he made the lives of many individuals normal who would otherwise have been doomed to a life-long crippled condition. Previously to his work the open method had been used, but the anatomical results were

not perfect, the functional results were not satisfactory, and, furthermore, the mortality from this rather severe and prolonged operation, with profound shock, was extremely high; it was considerably over fifty per cent. By the manipulative method there is practically no mortality. Following Lorenz's visit to this country and the general use of his method, it was recognized that there were certain disadvantages connected with it; that is, certain complications which might occur. Ridlon mentions the fact that in the two years after Lorenz was here he fractured the femur five times in attempts at reduction. Again, the stretching and severe tearing of the adductor tendons was very often followed by extreme ecchymosis and swelling and a great deal of pain and discomfort. In some few cases there was reported rupture of the larger blood vessels; and pressure paralysis following the manipulation in the region of distribution of the anterior crural and obturator nerves, which was rather prolonged, has occurred, fat embolism has also been reported a number of times, consequently many investigators have tried to vary the technic to obviate these difficulties. None of them was particularly successful, and they certainly did not get the percentage of results that the Lorenz method gave until Dr. Ridlon devised the method which Dr. Packard has described; and I fully agree with him that it is by far the better method in the great majority of cases. In the first place, we do away entirely with the stretching and tearing of the tissues, which is the first step, and which Lorenz considered a most important step in his manipulation. The Ridlon method, I think, allows of patients being operated upon at a later age than the Lorenz method. Lorenz put the limit at ten years of age for cases with a single dislocation, and eight years for double dislocations. The head of the femur can be brought down lower and can be slid into the socket, it seems to me, much more easily in these older cases by Ridlon's method. Then again, I think it allows of reducing hips at a younger age. While in the majority of cases it is not advisable to reduce the dislocation of the hip much under the age of two and a half or three years, because of the fact that children are not trained as to the discharges, still there are cases where the children have been trained so early that this is not an objection, and the very fact that the muscles and ligaments of the hip have not been stretched assures greater stability and the hip remains in place where it would not do so if reduced in the other way. The youngest case I have reduced was thirteen months old, and the anatomical result was perfect. It was that of a little girl who was well trained and had just begun to walk. An anatomical replacement was made, and in one year's time everything was taken off and she now walks perfectly.

The members of the Northeastern Colorado Medical Association have provided for the business interests of their associates now in army service by a resolution similar to those passed by the Denver and Pueblo County Societies, pledging to the doctor in the service fifty per cent of fees collected from his patients.

The city council of Greeley are considering a proposed plan for the control of venereal disease. An ordinance similar to that of Denver was recommended by Dr. Erlo Kennedy, of the state board of health, who addressed the council May 16.

EXPERIENCE WITH THE NEWER TREATMENT OF BURNS.*

OSCAR M. SHERE, M.D., F.A.C.S., DENVER.

With all the evil that has followed in the train of the present world-upheaval it is good to find in counterbalance at least some beneficial results from it. By this time we have become familiar with quite a number of important contributions marking the triumph of science over disease. And while our knowledge thus enriched is to be utilized mostly during wartime there is one valuable acquisition added to our surgical armamentarium which is more valuable in peace than in war, and that is the new treatment of burns, which are more common in the industries as well as in every day life than on the battle field.

My initial acquaintance with this method was made possible by the perusal of an article which appeared in a lay journal. Under the caption "A Painless War-cure For Burns" (*World's Work*, December, 1916) Arno Dosch-Fleurot writes:

"A soldier from the Somme was brought into St. Nicholas Hospital near Paris so extensively burned that he was scarcely recognizable as a human being. Just six weeks later he was up and walking around, and the only indication he showed of ever having been burned was an occasional discoloration of the skin. The new skin that had grown over two-thirds of his body was just like the skin that was there before . . . No less remarkable than this complete disappearance of all traces of the wound is the fact that the soldier suffered no pain after the first day. St. Nicholas Hospital is full of similar, even worse, cases. It has cured four hundred and fifty cases in the last year, all of them extensive burns, as it does not get the mild cases".

The above quotation from this high sounding and hardly believable article aroused my interest and gave me sufficient incentive to investigate the subject further. Having learned that the name of the man responsible for this treatment was Dr. Barthé de Sand-

fort, I commenced a search of our own professional literature. All I could find at that time was a brief article in the *Bulletin de l'Académie de Médecine* for April 14, 1914, by de Sandfort, which I will here review in abstract. I do so with the view of once more accentuating the skepticism natural to the medical profession, which attaches very little interest to any new idea or remedy if it is out of the ordinary, and especially when it is introduced by an uncommon or inconspicuous member of the profession.

In this report de Sandfort tells of his experience with this treatment of burns since 1901. He first employed the remedy in treating himself for rheumatism. After taking the cure at Dax, where the hot mud baths gave him great relief, he desired to continue the treatment at home. Not being able to transport the Dax mud, he endeavored to find a substitute, and, after many experiments, he combined paraffin and the resin of amber, which, when melted together and applied hot, made a firm bandage affording relief. Years later he went on service to a railway in China and was in Yunnan at the time of the incendiary insurrection, where many Chinese, badly burned, were brought under his care. Remembering that Ambrose Paré treated such cases with hot oil, he tried the effect of covering the burns with his melted paraffin mixture, which at once glazes over, forming a coat impervious to the air, and his patients ceased to suffer. In a few days all infection disappeared and the surfaces began to repair and grow new skin, which eventually covered the burned area in such manner as to leave no cicatrices and no evidence that a burn had existed. Upon his return to France in 1904, he related to his colleagues his experience with his new remedy, but they ridiculed him and his wax.

And thus ten years elapsed during which period the method was reposing in total obscurity, until the present war, with its new engines for the production of frightful burns, created a demand for a better method than that heretofore used in the treatment of thermal injuries.

There is, however, one important point in defense of the indifference with which the

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

medical profession received the remedy and that is the sad fact that Dr. de Sandfort has kept his formula secret. Despite the great existing need for it, the mixture was patented under the name of ambrine and the doctor permitted a company (Ambrine Company, Paris) to exploit his remedy at a very high price. That act, which was certainly inhuman, to say the least, was indeed responsible for the antipathy manifested by the profession toward the discoverer and his remedy.

However, necessity being the mother of invention, various substitutes for the patented preparation, "ambrine", were soon brought out and the difficulty was thus surmounted. The first paper upon the subject to appear in our own literature was one by Lient-Colonel A. J. Hull, F.R.C.S., of the Royal Army Medical Corps in the British Medical Journal, January 13, 1917, from which the following quotation will prove of interest:

"Observations of Dr. Barthé de Sandfort's treatment and experiments with ambrine, carried out in a military hospital, gave one the impression that the treatment was valuable. Burns healed with rapidity, constitutional symptoms rapidly abated, pain was reduced to a minimum; scarring appeared to be obviated, or at any rate was not apparent. The need for grafting large burns appeared to be avoided. The burns healed so rapidly with healthy granulations that there appeared to be nothing to be gained by grafting. The patients were singularly free from sepsis. The conclusion arrived at from experimenting with the ambrine treatment was that mild burns healed with singular rapidity, and severe cases recovered which would have been unlikely to recover by the ordinary method of treatment . . .

The excellent results obtained would therefore appear to be due to mechanical causes. The protection of the burn from the air, the protection of the newly formed granulations from damage, the splint-like effect of the wax in holding the damaged tissue immobile and at rest, appear to be attributes which produce the effect . . ."

After experimenting on a number of patients, Dr. Hull finally succeeded in pre-

paring a satisfactory formula which he terms No. 7 Paraffin consisting of:

Resorcin	1 % or Betanaphthol 0.25
Eucalyptus Oil	2 %
Olive Oil	5 %
Paraffin Molle	25 %
Paraffin Durum	67 %

With the above formula as a basis I have commenced to give the method a clinical trial and while the results were eminently satisfactory, the time for epithelialization was rather long and the burns were slow in healing. The idea then occurred to me that if some substance or ingredient possessing an intrinsic epithelializing action could be incorporated in this mixture the time for healing could be shortened. After a good many experiments, a formula was evolved which is the same in principle as Dr. Hull's or any other preparation on the market, yet I contend that it possesses one distinct advantage over the others in that it not only acts as a protective but in addition has the distinct feature of stimulating the growth of epithelium. This contention has been verified by applying the different products upon separate zones in the same burn. Additional clinical experience, however, proved the fact that the same preparation could not be used with equal benefit to the patient throughout the entire treatment. Experience with the practical application of the method has demonstrated the fact that during the healing process of all burns, but more particularly in the deeper varieties, we are confronted with three relative, if not absolutely distinct, phases and that each individual phase demands special therapy.

Thus when the paraffin mixture is first applied it is extremely painful, and, to avoid this, some local anesthetic agent should be incorporated. This phase lasts but a few days, and during this period the following is used:

Basic Formula

White Vaseline	15 oz.
Ol. Petrolati	2 oz.
Ol. Eucalypti	1 oz.
Paraffin (M.P. 42.7 C. U.S.P.)	16 oz.
White Wax	1½ oz.
Pix Burgundica	1½ oz.

To the above is added

Menthol	$\frac{1}{8}$ oz.
Thymol Iodide	$\frac{1}{8}$ oz.

The entire mixture is designated "Formula No. 1".

The cooling sensation of the menthol is almost in every case sufficient to neutralize the effect of the hot paraffin, which is but momentary in its duration. The other special ingredient, thymol iodide, which is used in this mixture, while not considered a powerful antiseptic, has nevertheless been found to be amply efficient in combating infection as so commonly seen in burns treated by other methods.

We now approach the second phase in the healing of the burn when the main indication is to stimulate the growth of epithelium. To this end, scarlet red in one-half per cent strength is added to the basic formula and this combination we call "Formula No. 2".

The above mixture is used until epithelialization is nearly complete. Subsequent to this phase it was found highly advantageous to replace the scarlet red by bismuth subgallate, in proportion of 1 to 10. This is called "Formula No. 3". By its physiological properties the bismuth aids in drying up the wounds and its astringent effect con-

stricts the blood vessels and hardens the newly formed epithelium.

With the principles outlined in the preceding pages as a basis, the following technic is recommended:

(A) Do not interfere with blisters; simply irrigate the affected region with warm Carrel-Dakin solution.

(B) Dry by gentle application of plain gauze or by an electric drying apparatus.

(C) Cover with a single layer of either formula at a temperature of about 110° F. (While many different sprays have been devised for the use of this treatment, the writer has found a broad camel's hair brush, sterilized in wax, highly satisfactory).

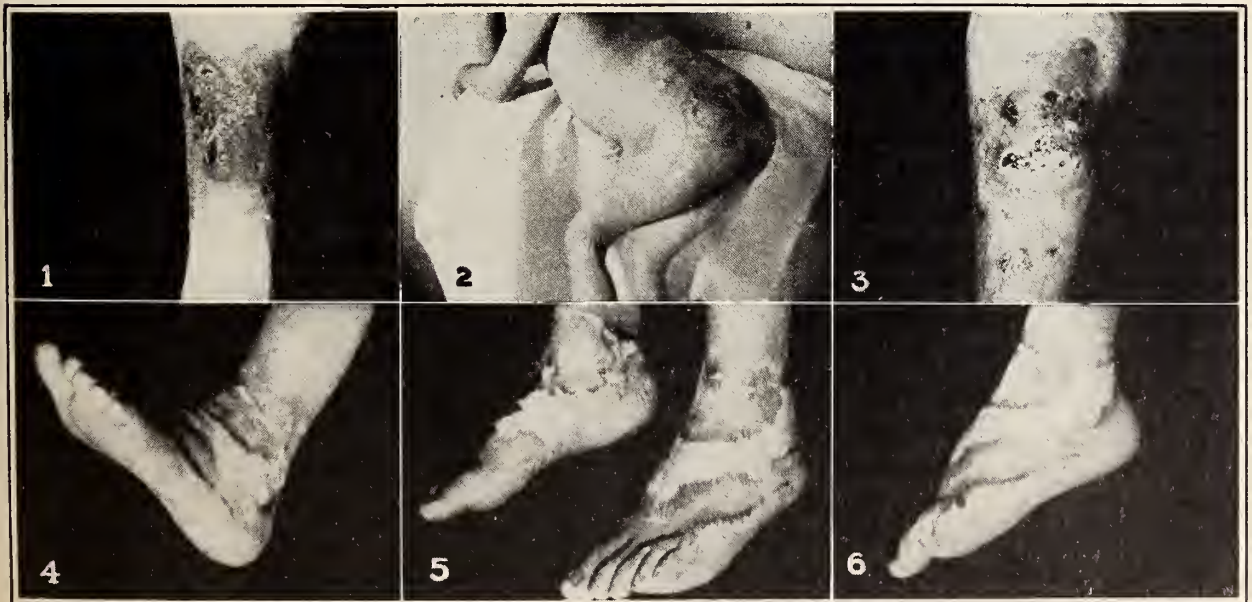
(D) Place two or three layers of plain gauze over the first coating of paraffin and apply a second layer of the mixture.

(E) Cover this with plain fluffed gauze and a light bandage.

(F) Redress daily. These dressings are extremely easy, rapid and absolutely painless.

The superiority of this method to any other hitherto employed in the treatment of burns may be thus briefly summarized:

- (1) It protects the burn from the air.
- (2) It protects the newly formed granulations from damage.



Figs. 1 to 6.

(3) The plaster-like effect of the paraffin keeps the wounded tissue immobile.

(4) The heat of the application and the conservation of heat at the surface stimulates the flow of lymph, increases the supply of blood to the new capillaries and favorably affects healing.

(5) It stimulates epithelial proliferation in a suitable nidus.

Out of a large group of cases I shall merely append the brief histories of four, representing, as they do, the types which will best illustrate the claims made for the method in the former part of this paper.

Case 1. J. S., age thirty-four years, was admitted to the City and County Hospital on April 3, 1917, suffering from severe burns of face, both upper extremities and back. These burns were caused by a gasoline explosion. His pain was highly intense, requiring hypodermics of morphine every two hours. He was treated by the picric acid and oil method for eight days, during which period he was suffering greatly and was markedly restless. Temperature ranging from 100° to 103° . Pulse over 120 at all times. In general, he presented the appearance of one in extreme collapse. The paraffin treatment was instituted in this case on April 11, with instantaneous relief. His temperature and pulse came down to normal in twenty-four hours and pain disappeared after the application of the first dressing. Recovery was complete and he was discharged on May 4, three weeks after the commencement of the treatment. It is very difficult to find the slightest scarring of the burned area. (See figure 7.)

Case 2. E. L., age four and a half years, referred by Dr. C. B. Van Zant and admitted to the hospital May 10, 1917, with the history of having fallen about twelve days previously into a pit containing hot ashes. Upon examination, the dorsal surfaces of both feet were found to be burned down to the tendons. The burn on the left foot involved all the toes and extended around the ankle joint. The toes of the right foot were free but the burn extended up to the upper third of the leg. The subcutaneous venous plexus of the left foot was entirely exposed. Numerous putrid sloughs were

present over the burned areas of both feet and the child was in constant pain. Pulse,

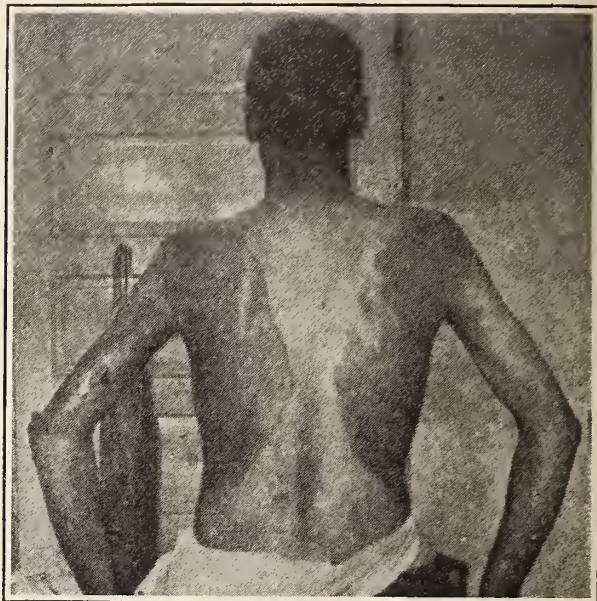


Fig. 7.

120 to 140. Temperature, 99° to 101° . Shortly after the treatment was instituted, the pain completely ceased, temperature became normal, pulse less frequent, and, aside from a thermic reaction following a too hot application, the patient had uncomplicated complete healing of both feet in less than five weeks. In this case the scarring is negligible and the patient has complete restitution of extension and flexion, without the slightest contracture in either foot. (See figures 4, 5, and 6.)

Case 3. This is a case of a burn of over two years' standing. The patient, M. L., age 5 years, was found on the prairie with burns from unknown cause extending over half of the body and was brought to the hospital on January 7, 1915. Every known form of treatment was accorded this case, including numerous skin-grafting operations, with but partial success in some areas and none in others. When this patient came under our care, an area covering the entire buttocks and extending to the middle of the back and down the left thigh was completely devoid of skin covering. Having had no experience with burns of such long duration, the treatment was undertaken with a great deal of skepticism. We were, however, rewarded by an epithelialization of

the denuded area, which was complete in six weeks. (See figure 2.)

Case 4. R. W., age twenty-six years, din-

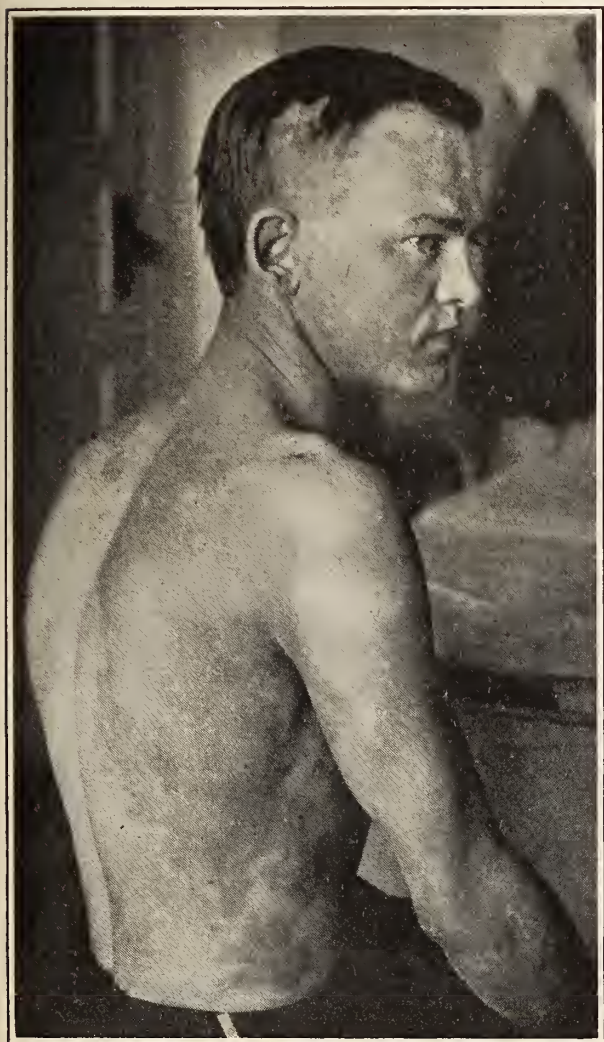


Fig. 8.

ing car chef. Was burned on July 31 when his car turned over and his face and body were literally covered with hot gravy, grease and boiling water. He came under my care three days later when an examination disclosed burns of second and third degrees upon left side of face, back, left forearm and right leg. The entire burned areas were infected, as is usual in this type of injury. Notwithstanding this infection, healing was complete in five weeks, during which period the patient was up and about most of the time. (See figures 1, 3, and 8.)

In conclusion, I desire to acknowledge gratefully the cooperation given me in the treatment of these cases by the resident staff of the City and County Hospital as

well as by Mr. M. H. Mayers, chemist, who made numerous pharmaceutical experiments in the development of the preparations used in carrying out this method of treatment.

DISCUSSION.

Charles B. Van Zant, Denver: One of the patients referred to by Dr. Shere, the little girl whose feet were so badly burned through falling into an ash-pit, was under my care before she was referred to him. As he has indicated to you the burn was very deep and extensive. From a considerable experience in the handling of burns, as these come to one in general practice, my impression from this one case is that the treatment just outlined offers most decided advantages over the methods in common use. When referred to Dr. Shere the case showed large sloughing surfaces, with heavy discharge of pus. It had been treated for several days with antiseptic irrigations and picric acid gauze. The removal of the dressings daily was exceedingly painful. When the paraffin mode of treatment was substituted by Dr. Shere, the relief of pain and the ease of subsequent dressing were very marked, the clearing up of the burnt surface was very evident from day to day, and there was ultimate cicatrization with no impairment of motion, and without skin grafting. These things impressed me deeply. In other cases of this sort I should certainly feel inclined to try this method; and while it is possible that we may find it necessary in the future to discount some of the enthusiastic claims that have been made for this treatment, it looks promising and worthy of further trial and observation. Aside from its other advantages, the easy removal of these dressings, without pain, bleeding, or the opening up of fresh surfaces, gives it great value.

INTERNAL JUGULAR RESECTION; OPERATION FOR LATERAL SINUS THROMBOSIS FOLLOWING RADICAL MASTOID OPERATION.*

THOMAS J. GALLAHER, A.M., M.D., DENVER.

Infection of the lateral and sigmoid sinuses and jugular bulb is caused by direct contact with diseased bone or by the presence of pus. Thromboses of the intracranial venous sinuses secondary to otitic disease almost invariably have their origin in the lateral sinus. Extension may then take place involving any of the sinuses and the jugular vein. Lateral sinus thrombosis is the most frequent of all intracranial complications and occurs mostly as a result of mastoiditis. Symptomatically, thromboses may be divided into typical, atypical and primary jugular bulb involvement. They

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

may be parietal or of the complete obstructing type, septic or non-septic. In the typical class the most common symptom is the peculiar temperature range. Within a few hours the temperature may reach 104° or higher and drop rapidly, only to rise and fall as abruptly again. However, there may be only one or two such fluctuations within twenty-four hours. The temperature in suspected thrombosis should be taken hourly by rectum lest we overlook these variations. The atypical cases following mastoid operations do well for some days, when there is a sudden rise of temperature to 103° or over which remains high with slight variations for one or two days. Primary jugular involvement without previous mastoiditis occurs in young children suffering from acute purulent otitis media. Infection takes place through the floor of the tympanum with or without a dehiscence. In addition to these three classes some cases have been reported in which the symptoms closely resembled those of typhoid fever and this disease must be eliminated in arriving at a diagnosis. Chills are by no means constant, but when they do occur, still further indicate septic absorption. Optic neuritis is present in about thirty-five per cent of cases. With early diagnosis and proper surgical interference the results are surprisingly good. In the later stages with metastasis the mortality is extremely high. Perisinus abscess is impossible to diagnose and is only discovered during operation. Involvement of the outer coat of the vein may show no symptoms, but clot results with positive symptoms when the intima is affected. Obstructing clot is usually septic while parietal clot may be septic or non-septic. Jansen and Heine believe non-septic clot may result from mechanical pressure while Leutert considers all thrombi septic. Granulations upon the sinus wall must be regarded as protective and while removal of the affected bone is indicated, the sinus should not be opened or punctured in this condition. Good results follow this practice. Infection of the internal jugular vein is caused by sepsis extending downward. Before opening the sinus great care should be exercised to eliminate any other possi-

ble source of infection throughout the body as well as systemic diseases. According to Kerrison, the mere presence of streptococci in the blood unless reinforced by clinical manifestations of the disease cannot be accepted as sufficient ground for diagnosing sinus thrombosis or for opening the sinus. According to Libman, the great majority of cases of sinus thrombosis are due to streptococcal infection. According to Duel and Wright, of fifty-seven cases treated in the Manhattan Eye and Ear Hospital a bacteremia was found in sixteen. Of the sixteen positive blood cultures streptococci were present in fourteen. Leucocytosis and polymorphonuclear count are greater in sinus thrombosis than in mastoiditis and this fact is of much value in diagnosis. The x-ray sometimes gives confirmatory evidence. The macroscopical appearance of the sinus wall can only in exceptional cases be relied upon as evidence of intra-sinus infection. Puncturing of the sinus wall with the hypodermic needle is mentioned only to be condemned for several reasons. The sigmoid sinus is exposed from above the knee, toward the bulb, as far as possible. The facial nerve can be easily wounded by cutting too far forward. An assistant controls the hemorrhage by means of two pledgets of gauze with which he compresses the sinus toward the bulb and torcular as directed by the operator. The sinus is incised for an inch or more. When free bleeding occurs from both ends it is taken as presumptive evidence of the absence of a clot. It must be remembered, however, that the bleeding from below may come from the inferior petrosal sinus and from above it may come from the posterior emissary vein or the superior petrosal sinus. Under no circumstances should the sinus be curetted but the bone should be removed from beyond the clot posteriorly and the vein incised the entire length of the affected portion. It is well to remove the outer wall of the sinus. The hemorrhage should be controlled permanently by placing a pledget of iodoform gauze between the skull and the sinus wall. The healthy vein must not be packed with gauze. Curettement of the vein or packing it is certain to result in postoperative clot.

It appears to be the consensus of opinion that the internal jugular should be ligated or resected when it is impossible to establish the flow from the bulb, or when the clot has undergone purulent disintegration. However, when the flow is established from the bulb, still we cannot say that a non-obstructive parietal clot does not exist in the bulb. This is proved from the fact that after the sinus operation has been performed a large number of these cases come to jugular ligation or resection within a few days or a week. Therefore many experienced operators have come to the conclusion that when the sinus is opened on account of septic absorption the patient's welfare is best served by ligation or resection of the jugular vein in every case. Recently we have had two cases in which the sinus operation was performed establishing free flow from both ends in which it became necessary to resect the internal jugular vein within a week. Voss, Grunert and others have recommended in addition to jugular resection a complete exposure of the bulb but this is not done often in this country as experience and statistics prove that it is unnecessary except in the rarest of cases.

Upon what points must we determine the advisability of ligation or resection of the internal jugular? Both of these procedures are done to prevent septic material from reaching the heart and thereby entering the general circulation. Ligation to be successful must be done below the point of infection. It is impossible to tell macroscopically how far infection and phlebitis have extended along the vein. It is therefore evident that ligation can be effective only in the very early stage when it is possible to get below the septic point. A resection undoubtedly gives an infinitely greater chance to remove all sepsis from the vein and we prefer this procedure. The jugular should be ligated with two catgut ligatures as near the clavicle as possible, always below the omohyoid. The tributary veins are cut between two ligatures and the jugular resected to a point above the common trunk of the facial and lingual veins. Ballance brings the jugular stump out of the upper angle of the wound. A fenestrated rubber

drainage tube should be placed in the upper angle and the neck wound may be left open or closed over the drainage tube. The revered Dr. Gruening after exhaustive clinical studies proved that the bacteremia was definitely checked within twenty-four to forty-eight hours after the resection.

Case: Lad, A. D., age twelve; discharging ear for ten years, hearing two feet for voice, four inches for whisper. Normal response to the static labyrinthine tests. No fistula. Radical mastoid operation at St. Luke's Hospital, Denver, April 11, 1917. For three days temperature did not rise over $99\frac{1}{2}^{\circ}$, then became normal and remained so until the nineteenth day. He then developed an intense headache with temperature of 103° . During the next four days he presented the typical symptoms of sinus thrombosis as evidenced by the increased leucocyte and polymorphonuclear count, wide and rapid excursions of temperature with remission and lastly an intense chill. Every effort was made to eliminate intercurrent diseases, including typhoid fever. We at once opened up the sigmoid and lateral sinuses which showed no clot but profuse bleeding from the bulb and torcular. We did nothing further at this time. Immediate improvement followed with temperature ranging between 100° and 103° and in seven days afterward temperature rose to $105\frac{1}{2}^{\circ}$ with intense rigor. I immediately opened up the neck and resected the jugular vein from below the omohyoid to a point above the lingual vein. The jugular vein was collapsed from the bulb to a point about a half inch above the clavicle and I was very fearful lest we could not get below the point of infection. The wound was treated as outlined above and the patient made an uneventful recovery. The ear is now dry and hearing the same as before operation. An abscess developed on the opposite side of the head over the parietal which I believe was not hematogenous but was due rather to a slipping of septic material under the fascia. I believe in this case that a parietal thrombus existed in the bulb at the sinus operation although return flow was established. The occurrence of thrombosis nineteen days after op-

eration is unusually late but I have had one other case in which thrombosis followed seventeen days after operation. The jugular was resected also in this case, with recovery.

605 California Building.

RELAPSING FEVER ENDEMIC IN COLORADO.*

JAMES J. WARING, M. D., DENVER.

We beg leave to present to you today the clinical history and laboratory findings in a case of relapsing fever originating in the same locality as Dr. Meader's cases reported in 1915. The patient was a boy twelve years of age. His father has been ill for the past three years with pulmonary tuberculosis and is now an arrested case. The boy himself was examined two years ago by Dr. A. C. Foster and Dr. G. B. Gilbert of Colorado Springs and by them considered to have a slight glandular and pulmonary infection. While under my care this past winter he showed definite evidences of tuberculosis. He came to Colorado July, 1915, and has not been out of the state since except from October 1st, 1916, to October 25, 1916, when visiting in Kansas City, Mo. He resided in Colorado Springs continuously from his arrival and, saving only for this above mentioned visit, until he came to Denver March 12th, 1917. July 6th to 9th he spent at Lake Wellington near Buffalo Park. From August 1st to 7th he spent at Troutdale, Bear Creek Cañon, returning to Denver on the latter date, and he was taken sick August 12th. As a case rarely develops when the last opportunity for infection has exceeded eight days, I think we can safely exclude the Lake Wellington trip from our considerations.

On Sunday August 12th the boy was drowsy and disinclined to play. On August 13th he had a chill in the early morning and his temperature rapidly rose to 104. On August 14th it went to 105.2. By August 16th it had returned to normal. I saw him first on August 13th. He was torpid, skin very sallow—almost icteric—eyes bright,

cheeks flushed, a herpetic eruption on his upper lip, tongue coated, breath heavy, and complaining bitterly of headache and pains through the back and legs. He also had some pain and tenderness over the spleen, which was markedly enlarged. The liver was not notably increased in size, nor were heart and lung findings different from former examinations. The bowels were constipated, he had vomited twice and did so repeatedly during this attack and the two subsequent paroxysms. I might note here that the spleen was palpable throughout his illness but increased considerably in size during the paroxysms, becoming smaller but still palpable in the intervals.

White blood counts:

	8-14	8-24	8-31	9-4	9-10
White Bl. Counts	6,400	7,200	9,000	8,200	12,900
Polymorphonuclears..		57	62	58	69
Large Lymphocytes .		15	13	2	7
Small Lymphocytes .		11	18	40	23
Transitionals		15	7	0	1
Eosinophiles		2	0	0	0
Basophiles		0	0	0	0

In spite of the acute onset, typhoid fever was considered a possibility, this suspicion being warranted more or less on the grounds of an enlarged spleen and a leukopenia. The Widal test and blood culture were both immediately negative and as these reports came in from the laboratory the first crisis occurred, the temperature falling rapidly with moderate sweating to normal. With the subsidence of fever, appetite returned and the malaise disappeared as if by magic. I confess to being puzzled by the return of fever on August 20th. On this day he had a hard session with the dentist in the morning, with gradually rising fever in the afternoon. In my mind were now two thoughts—relapsing fever and tuberculosis. The lung findings were as before except for the presence of deep-seated, distant, subcrepitant râles scattered over the right back and heard only after cough. There was no cyanosis, pulse 120, eyes and reflexes normal. In this connection Hagler, military surgeon, writes that fine moist râles were found in the chest frequently throughout the first few days of the febrile period. Search was made for the spirochete in the blood but it was not found until later.

There was an absence of the urinary find-

*Read before the Medical Society of the City and County of Denver, October 16, 1917.

ings noted by Meader—I refer to the appearance and disappearance of a considerable amount of albumen and large numbers of fine hyaline casts.

The differential and absolute white blood counts are tabulated. Meader calls attention to a rise in the transitionals during the attack and a slightly increased white count and fairly normal differential count during the interval, with corresponding inverse variations in the polymorphonuclear neutrophils. The counts in this case were made at irregular times in relation to the paroxysms, so that deductions are difficult, but on careful study it is clear that there is a steady increase in the absolute lymphocyte count. In this connection it will be recalled that Novy and Knapp consider the rôle of the mononuclear phagocytes most important in the ingestion of spironemata.

The third paroxysm came on the 29th of August after three days of fever to as high as 99 with the crisis on the 31st. There was then an interval of nine days with temperature to 99 or slightly over before the final paroxysm. It is probable that the long interval was due to the medication. That the boy was not well during the second and third intervals was evident from the fact that his spleen was still palpable and that he had an occasional elevation of temperature to 99 or slightly over.

The fourth paroxysm came on the 9th of September with normal temperature again by the 11th. Exactly seven days after the subsidence of this attack, or on September 17th, the temperature rose from 98.1 at 7 a. m. to 105 at 10 p. m. Four hours later it was normal and it has remained normal ever since.

The patient, somewhat thin and weak after his illness but otherwise in excellent condition, was kept in bed until twelve days had elapsed without fever before permitting him to get up, it having been the general experience that if this interval elapses without a paroxysm none is likely to occur.

As yet no opportunity has been given for the study of transmission. Hagler, from his Serbian experience, has made certain important observations. Three parasites are under suspicion as vectors, viz: the tick, the

body louse and the bed bug. Relapsing fever appeared in Serbia coincidently with typhus fever and the same preventive measures were effective against both diseases. Whereas typhus practically disappeared with the lice, relapsing fever persisted and continued to develop in the medical wards of the Belgrade Hospital until systematic sulphuric fumigation of wards and rooms was undertaken to destroy bed bugs. "After this," says Hagler, "it also disappeared". Further, "of fifty Red Cross surgeons and nurses at least twenty contracted typhus while none developed relapsing fever". It would appear more probable that the nurses and doctors would be bitten by lice than by bed bugs and therefore a major rôle should be ascribed to the latter in the transmission of relapsing fever.

Noguchi, however, in a recent exhaustive consideration of spirochetes says: "In the case of *Spironema recurrentis* both body lice and bed bugs may be infected by sucking the blood of a patient suffering from European relapsing fever, but the lice alone can transmit the disease to the next person they bite. Bed bugs are never known to spread the infection by their bites although by crushing the infected bugs directly over a minute skin trauma (scratch, etc.) a person may become infected."

In conversation with Dr. Meader I learned of certain ideas of Prof. Theo. D. A. Cockerell of the University of Colorado, as regards the biting fly as a transmitting agent. The following facts I obtained through Prof. Cockerell. During the summer months there occurs in the mountains of Colorado a powerful biting fly, by name *Symphoromyia*. This fly is found also in the mountainous districts of Europe where relapsing fever occurs. The localities where certain genera are found are as follows:

S. atripes: Rabbit Ear Pass; Long's Peak Trail on way from Long's Peak Inn.

S. hirta: Marshall Pass, 10,856 ft.; Long's Peak Trail, on way from Long's Peak Inn; Webber Ranch, between Ward and Allen's Park.

S. pullata: "Colorado".

S. trivittata: "Colorado".

Prof. Cockerell also sent me sketches of

the wings of the buffalo gnat and of the symphoromyia. It is highly improbable that these flies have anything to do with the transmission of this disease. I have been able to find little information on them as possible vectors. Nuttall tried for a long time unavailingly in England to convey the *Trypanosoma brucei* by means of the genus of biting flies called Stomoxys. Schuberg and Kuhn, however, record a successful transmission of relapsing fever by Stomoxys.

A word as to treatment: Salvarsan is supposed to be specific for all spirochetes. It was not used in this case, resort being had to quinine and sodium cacodylate. Hagger recommends quinine and Fowler's solution in increasing doses to shorten the febrile attacks and reduce the number of relapses.

In concluding his paper Meader said: "These cases are reported for the purpose of calling attention to the existence of this disease in Colorado so that the members of this Society may be especially on the watch for it to determine if this be only a sporadic, accidental outbreak or if we have an endemic focus."

In view of the fact that last summer there were certain cases suspicious clinically of which I heard but none of which did I see, and in view of the fact that this case was successfully demonstrated, and that I have also heard of two other suspicious cases this year, it would appear that this disease may be considered endemic in Bear Creek Cañon.

Metropolitan Building.

News Notes

Dr. Crum Epler, Secretary of the Colorado State Medical Society, has been commissioned in the M.R.C., and has left for Camp Custer, Mich.

Dr. C. W. Maynard, 537 Thatcher building, Pueblo, has been appointed Assistant Secretary of the Colorado State Medical Society to act during the absence of the Secretary, Dr. Crum Epler, on war service.

Dr. C. H. Wilkinson of Cañon City has received a commission as lieutenant in the M.R.C. and expects to be called to service in about ninety days.

The statement in the May news items that Dr. C. W. Poley had been appointed to the teaching staff of the University of Colorado hospital has been found to have been erroneous.

Captain W. A. Sedwick, who was in Denver recently on a ten days' furlough from the base hos-

pital at Camp Grant, returned for duty on May 28.

Drs. L. H. Wade and F. B. Stephenson of Denver have combined their offices and equipment for the joint practice of roentgenology, at rooms 436, 438, 454 and 456, Metropolitan building.

Dr. Mary R. Stratton of Denver has gone east for postgraduate work in nose and throat. She will attend the meeting of the A.M.A. in Chicago while away.

The two sons of Dr. George B. Packard of Denver who are now serving in the M.R.C. have been ordered to France; Dr. Robert G. Packard, now a captain, to base hospital number one hundred and fourteen and Dr. George B. Packard, Jr., a lieutenant, to base hospital number one hundred and sixteen.

The Children's Bureau, U. S. Department of Labor, has made a study of Norwegian legislation regarding the rights of illegitimate children. These laws make the state instead of the mother responsible for establishing paternity and hold both parents equally and continuously responsible for the illegitimate child, which is considered to be entitled to maintenance, training and education from them both. The Bureau examined the evidence obtainable but could not find justification for the statements circulated that there is a wide-spread increase of illegitimacy in this country since the war began; it believes, however, that the needs of the illegitimate child must be considered in the Children's Year campaign.

The death of Dr. Herbert A. Lord of Pueblo took place on May 15. The cause of death was cerebral hemorrhage.

Dr. Fred G. Swartz of Boulder, secretary of Boulder County Medical Society, has been commissioned a lieutenant in the M.R.C.

The engagement of Miss Margaret Brewster to Dr. William Donaldson Fleming of Denver has been announced. Dr. Fleming is a lieutenant with base hospital number twenty-nine.

Dr. E. M. Marbourg of Colorado Springs has been given a commission as captain in the M.R.C. and expects to enter the service as an ophthalmologist.

According to information received by his wife, Captain Fosdick Jones of Denver has been invalided home on a three months' sick leave from a Red Cross hospital near Paris.

Under date of March 19, the Food Administration circulated a letter calling the attention of physicians to a campaign for the conservation of alcohol, sugar and glycerin in prescribing. (See Colorado Medicine, April, 1918, page 108). According to a bulletin of the American Drug Manufacturers' Association, at the instigation of their War Service Committee the Council of National Defense called a conference for April 12 of all interested government officials to consider the wisdom of this propaganda. The following conclusions were reached at the conference:

"In view of the importance of alcohol, sugar, and glycerin in the manufacture of pharmaceutical preparations and of the limited possibilities for the conservation of alcohol and sugar therein, it was deemed advisable to refrain at this time from recommending the conservation of sugar and alcohol in so far as their use in pharmaceutical preparations is concerned".

The matter of the conservation of glycerin will be given further study.

Dr. O. R. Gillett of Colorado Springs recently was operated upon in Philadelphia for slight

hernia; this was a prerequisite for his final acceptance in the M.R.C.

Dr. F. R. Spencer of Boulder left home May 24 for a three weeks' trip in the east. He will attend the A.M.A. meeting in Chicago.

The records of Denver's health department show that during 1917 Denver had only three hundred and twenty-five deaths of babies less than a year old. This in contrast with six hundred and fifty-three for Providence, R. I.; seven hundred and twenty-four for Minneapolis, Minn.; five hundred and eighty-four for Rochester, N. Y., and five hundred and forty for Toledo, Ohio—towns of almost the same population as Denver.

Denver lost only forty-five babies between the ages of one and two years during 1917. Providence lost one hundred and thirty, Toledo one hundred and thirty-five and Rochester one hundred and forty-one.

Dr. G. M. Anderson, formerly of Denver and now of Casper, Wyoming, spent a short time in Denver in the beginning of June on his way east.

Dr. N. Eugenia Barney of Sterling has gone to Hot Springs, Arkansas, as a delegate to the federation of women's clubs.

Dr. J. H. Daniel of Cliff is in New Orleans doing postgraduate work.

Dr. M. L. Babcock of Sterling recently spent several days in Denver.

Dr. Charles E. Lockwood of Olathe has been promoted to the rank of captain at the base hospital at Camp Jackson.

In view of the statement widely circulated in the local newspapers some time back to the effect that only 10.4 per cent of the physicians of Colorado had been recommended by the Surgeon General for commissions in the Medical Reserve Corps, it may be of interest to note that the records in the office of the Colorado State Board of Health indicate that by the early part of May of this year about 199 commissions had been granted to Colorado physicians, and that a further total of 58 applicants had been rejected up to August, 1917, the number rejected since that time not being given.

Medical Societies

CITY AND COUNTY OF DENVER.

The regular business meeting of the **Medical Society of the City and County of Denver** was held May 7, 1918. President Moleen was in the chair.

The secretary read a communication in which the society was invited to send a delegation to confer with a committee in regard to an effort to obtain larger quarters and more facilities to handle the men at Fort Logan.

Resolutions were offered by Dr. G. W. Miel and Dr. C. E. Edson upon the death of Dr. Frank G. McKlveen; by Dr. J. A. McCaw upon the death of Dr. John Chase; and by the secretary upon the death of the wife of Dr. Gurney C. Wallace. These resolutions were adopted by the society.

Dr. G. P. Lingenfelter presented a case of leprosy and gave an interesting demonstration of its different characteristics. This was followed by a talk by Dr. E. R. Mugrage upon the histologic pathology of leprosy.

Dr. H. G. Wetherill presented a card which is used in the offices of members of the El Paso County Medical Society. It is a printed notification to the patients of those doctors who are away on military service, to give the name of

their doctor, in order that his professional interests may be taken care of during his absence. Dr. Wetherill moved, and it was passed, that the society prepare a like card to be sent to every member of our society.

Dr. Wetherill also moved, and it was accepted, that a new committee of three be appointed to select an emblem for the fronts of doctors' automobiles and report to the society at its next business meeting.

A report of the serious poisoning of eleven boys from eating the roots of the water hemlock or cowbane (*Cicuta occidentalis*) was given by Dr. Mary R. Stratton. It was discussed by Dr. A. S. Taussig and Dr. Henry Sewall.

The scientific program began with an address on the "Obstruction at the Neck of the Bladder to Urinary Out-flow in Men past Forty," by Dr. William M. Spitzer. He emphasized the necessity of making a correct diagnosis to avoid unnecessary incisions or operations. He stated that there are many causes of obstruction besides an enlarged prostate.

Lieutenant Hugh Wardner, Medical Corps, U. S. A., Fort Logan, next gave an interesting paper upon "The Neurological Aspects of Recruiting". He said those examining recruits should be on the lookout for the psychopathic and the neuropathic cases, as they should not enter active war service.

Dr. M. Ethel V. Fraser next spoke on "Medical Women in the War". She gave a history of the efforts of medical women to be of service in this war. She told of the work of the Scottish Women's hospitals and of the American Women's hospitals which are now going to France. She also told of the efforts to have women accepted for service in the U. S. army with the same rank and pay which men receive for the same service. Dr. Edward Jackson then read resolutions to be forwarded to the Surgeon-General of the U. S. army. The resolutions were to the effect that women were going to be needed to fill the Medical Reserve Corps, should the war continue; that women should be accepted in the U. S. Medical Reserve Corps and should receive the same rank and pay given men for the same service. Dr. Henry Sewall took the ground that the society should not dictate to the government the terms on which the women should be accepted in the U. S. army and amended the resolutions to the effect that women be accepted in the Medical Reserve Corps of the U. S. army, leaving out the part with reference to rank and pay.

The question was discussed by Dr. Mary E. Bates. The society then passed the resolutions as amended by Dr. Sewall.

MARY R. STRATTON,

Reporter.

LAKE COUNTY.

The **Lake County Medical Society** met in regular session, Thursday, April 4, 1918, in the office of Dr. B. F. Griffith. The following were present: B. F. Griffith, H. A. Calkins, A. J. McDonald, R. J. McDonald, E. A. Whitmore, J. C. Strong and J. A. Jeannotte.

Dr. Griffith read a very interesting and practical paper, "Heart Diseases in High Altitude". The basis of his opinion was his experience in twenty years' practice in Leadville. The paper was enthusiastically received and was discussed by all of the members and especially by Dr. A. J. McDonald, who went into detail and gave a sum-

mary of his own twenty-odd years' practice in Leadville as relating to heart troubles.

Dr. Calkins reported a case of ruptured appendix that he and Dr. Jeannotte had recently operated upon successfully. Dr. Jeannotte discussed the case. Dr. Whitmore reported a similar case that had recently come under his care.

J. C. STRONG, Secretary.

The **Lake County Medical Society** met in regular session, Thursday, April 18, 1918, at the home of Dr. H. A. Calkins. The following were present: H. A. Calkins, E. A. Whitmore, R. J. McDonald, A. J. McDonald, B. F. Griffith, J. A. Jeannotte and J. C. Strong.

Dr. Calkins's paper, "Pelvic Abscess; An Unusual Case", was well received. The report of this case was thorough and the interesting points were well brought out. Dr. R. J. McDonald discussed the case quite at length. It was discussed also by Drs. Jeannotte and Whitmore.

Dr. Griffith reported a case of influenza that simulated typhoid fever. Dr. A. J. McDonald spoke of two cases of a similar nature.

Dr. Strong reported a case of serpiginous ulcer of the cornea that had been giving him considerable anxiety.

J. C. STRONG, Secretary.

NORTHEAST COLORADO.

The regular monthly meeting of the **Northeast Colorado Medical Society** was held in the city hall at Sterling May 9, 1918. A resolution was adopted which was to the effect that in the event that any member of the society should be absent in the service of the U. S. army, the members remaining home should turn over to the absent member or his family half of the fees collected from his former patients.

J. H. BRUSH, Reporter.

Book Reviews

Blood Transfusion, Hemorrhage and the Anemias.

By Bertram M. Bernheim, A.D., M.D., F.A.C.S.; Instructor in Clinical Surgery, The Johns Hopkins University; Captain, Medical Officers' Reserve Corps, U. S. A.; Author of "Surgery of the Vascular System", etc. Philadelphia and London. J. B. Lippincott Company. 1918.

This book is especially timely just now when so many doctors are being called to the service where there are many occasions for blood transfusion. There are two hundred and sixty pages in this book, divided into twelve chapters: Chapter One, Blood and the Phenomenon of Bleeding; Chapter Two, Diagnosis of Hemorrhage; Chapter Three, Control of Hemorrhage, Factors Involved in a Determination of Danger Limits, Blood Pressure; Chapter Four, Indications for Transfusion; Chapter Five, Dangers of Transfusion, Hemolysis and Agglutination; Chapter Six, Selection of Donor for Transfusion, Danger to Donor, Treatment of Donor after Transfusion; Chapter Seven, Methods of Transfusion, Technic; Chapter Eight, Transfusion for Acute Hemorrhage and Shock; Chapter Nine, Transfusion for Anemic and Debilitated Conditions in General, Blood Dosage; Chapter Ten, Primary Pernicious Anemia; Chapter Eleven, Transfusion for Hemophilia, Melena Neonatorum, Purpura, Jaundice; Chapter Twelve, Leukemia, Splenic Anemia (Banti's Disease), Certain Toxemias.

There are eighteen illustrations in the book

which are well selected and illustrate important points. The indications for transfusion are given as follows:

1. Transfusions for actual hemorrhage: (A) Traumatic, (B) Gastric and duodenal ulcer, (C) Post-partum, (D) Ruptured ectopic pregnancy, (E) Typhoid.

2. Transfusions in connection with surgical operations: (A) Preliminary to, during or just after operation, (B) For postoperative hemorrhage, (C) For postoperative shock, (D) For postoperative anemia and prostration.

3. Transfusions for the relief of hemorrhagic conditions: (A) Purpura hemorrhagica, (B) Hemophilia, (C) Hemorrhages secondary to (1) blood diseases, (2) severe infections, (3) jaundice, and idiopathic uterine hemorrhage.

4. Transfusions for blood disease: (A) Pernicious anemia, (C) Leukemia.

5. Transfusions for infections: (A) Infections with pyogenic organisms, (C) Subacute streptococcic endocarditis, (D) Subacute infection of any nature other than septicemia.

6. Transfusions for intoxications and poisonings: (A) Toxemia of pregnancy, (B) Eclampsia, (C) Uremia, (D) Benzol poisoning, (E) Illuminating gas poisoning.

7. Transfusions for debilitated conditions: (A) Cancer, (B) Malnutrition, (C) Simple anemia from any cause.

One very excellent feature of the book is the fact that it gives references at the end of every chapter.

In the chapter on methods of transfusion there is a very interesting discussion as to the merits of citrated blood for purposes of transfusion as compared with whole untreated blood. Dr. Bernheim says that so far as can be determined there seems to be little difference between the therapeutic action of whole blood and citrated blood, although there should be a vast difference from a purely theoretical view point. Since sodium citrate definitely inhibits blood coagulation outside the body, it would certainly seem that intravenous injection should raise the coagulation time of the blood. If this were true its use would be contraindicated in all forms of the hemorrhagic group of diseases and in the presence of active bleeding. The reverse, however, happens to be true. Instead of raising the coagulation time, according to Lewisohn and Weil, citrated blood lowers it for a time, after which it returns to normal. But there is one difference between a citrate transfusion and one in which whole untreated blood is used that cannot be passed over. A posttransfusion reaction, as manifested by a chill or fever, follows the citrate transfusion far more frequently than it does one with whole blood, even in cases where donor's and recipient's bloods match perfectly by every known test. Indeed, it is most unusual in my experience to have the slightest reaction after the whole blood transfusion with perfectly matched bloods; even a rise of temperature of more than a degree or two is unusual. With the citrated blood, a violent chill and fever up to 103° or 105° is to be expected about twenty minutes after transfusion in about one out of every three or four cases and minor grades of the same sort of reaction occur even more frequently. This is unfortunate and is most distressing to the patient, but is of no consequence so far as the ultimate result is concerned, since it is unaccompanied by any blood destruction such as would be manifested by a hemoglobinuria. It is of citrate origin, surely, but future investigation must reveal its true nature. One of the inexplicable features of this reaction

is that its occurrence or nonoccurrence cannot be predicted. It is possible, even probable, that these reactions will be fathomed and eliminated, but since they are not actually harmful, and since the citrate method of transfusion has so many obvious advantages over all other methods, it seems, after careful comparison, to be the present method of election.

This is a very valuable book for any one desiring to understand the subject of blood transfusion. It is well written, the type is easy to read and it is well indexed. The statements made are frank and true. I have been able to find no place where there is any exaggeration in the statement of results to be expected from transfusion.

F. C. B.

Lessons from the Enemy. How Germany Cares For Her War Disabled. By John R. McDill, M.D., F.A.C.S., Major, Medical Reserve Corps, U. S. Army. Illustrated. Lea & Febiger, Philadelphia and New York, 1918. Price, \$1.50.

This is a remarkable little book written by an officer of the United States army who, in the period of our neutrality in the present war, resigned his commission in our army and went to Germany, especially to study German army sanitary procedures and the German system of care for the war disabled.

We quote from the foreword: "An American Physicians' Expeditions Committee of New York was organized to send independent hospital units to the Central Powers. . . . We arrived in Germany on June 17, 1916; were assigned first to Coblenz on the Rhine and after one month to Fortress Graudenz in the East. . . . I addressed a communication to the War Ministry of Prussia requesting authority to study and inspect their sanitary system to get a clear conception of the medico-military and volunteer coordination and administration in the care of the sick and wounded, for publication in the United States.

"This request was promptly approved in a letter which, as an introduction to the German sanitary service, recommended a study of the following publications:

1. The Sanitary Regulations in War.
2. Niehus, The War Sanitary Equipment in the Field.
3. Altgelt, The Sanitary Service in the Field, 1910.
4. Paalzow, The Army Sanitary Establishment in War, 1915.

The remainder of the foreword reads like a novel and the whole of the book is of absorbing interest. Diagrams of the sanitary systems of field arrangements for disposing of the wounded, of hospital cars, surgical apparatus, etc., and many photographs, illustrate the text which is arranged under the following table of contents:

The German Medico-military Organization in War.

Administrative Methods of the Sanitary Service in the German Army.

Military Base Hospitals in Germany.

Some Medical and Surgical Aspects of War.

Volunteer Nursing and Welfare Work Under the Red Cross.

Reeducation of the War Disabled.

Orthopedic Hospitals-schools and Workshops.

Artificial Limbs or Protheses.

Information Blank for the Disabled.

A Word to Our Sick and Wounded Soldiers.

National and Communal War Relief Work.

The Social Health Insurance and Hospital Systems in Peace.

The whole book is readable and instructive,

even for the layman, especially for the physician. It is of the uniform war manual size. F. B. S.

Therapeutic Immunisation: By W. M. Crofton, M.D., Lecturer in Special Pathology, University College, Dublin; Visiting Physician, Royal National Hospital for Consumption in Ireland; etc. P. Blakiston's Son and Company, Publishers, Philadelphia. Printed in Great Britain. Cloth, \$2.50 net.

The same thing may be said of Crofton that is so often said of Wright: "He begins at one end of his subject and without wandering goes straight through to the other". His classifications are simple, fundamental. His arrangement is that of natural sequence. Each chapter is in accord with and anticipated by the one preceding.

This book "reads" easily. A layman could understand it. The author hides no ignorance behind a screen of ultra-scientific terminology. The most striking characteristic of this work is the careful defining of each technical term before its use. Immunity being one of our most recent studies, the terms employed by adherents of different theories have different meanings. Thus one might be uncertain as to the exact meaning unless the special terms are clearly defined.

The conclusions are placed where they belong, in the introduction. "There can be no doubt that vaccines will be and ought to be more extensively used for prophylactic purposes" and "For purposes of treatment vaccines are, at present, our most powerful weapon, both in chronic and in many acute infections", says this author. The author is not carried off his feet by the tide of enthusiasm. He proves every assertion and stays well within the substantial theories.

At this time of special attention and interest in immunology every practitioner, whether special or general, should read this book. Its simplicity commends it to those outside the bacteriologists' realm. Every physician should at least know the difference between a toxophore and a semaphore..

B. H. M.

Chemical Pathology: Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago and in the Rush Medical College, Chicago. Third Edition, Revised and Reset. Philadelphia and London: W. B. Saunders Company, 1918.

The third edition of this well known work shows evidence of a careful and painstaking revision, several subjects having been largely rewritten, and many new sections have been added, the most important being those on atrophy, specificity, the pressor bases, the Abderhalden reaction and the chemical basis of growth. The book serves as a complement to the more numerous treatises upon morphologic pathology. The text comprises a very complete and modern outline of the experimental conclusions of physiologic chemists in every land, clearly set forth and arranged in orderly sequence by the author, along with a brief exposition by himself of generally accepted facts and principles. Bibliographic references are presented in footnotes on each page. Dr. R. T. Woodyatt again contributes the final revised chapter upon diabetes and carbohydrate metabolism. The book is a well filled storehouse of collateral reading for students, and likewise a valuable reference work for progressive physicians and surgeons.

E. C. H.

Thyroid and Thymus. By André Crotti, M.D., F.A.C.S., LL.D.; Formerly Professor of Clinical Surgery and Associate Professor of Anatomy at Ohio State University College of Medicine; etc., etc., etc. With 96 illustrations and 33 plates in colors. Lea and Febiger, Publishers, Philadelphia and New York, 1918.

This is a beautifully bound volume of five hundred and sixty-seven pages. It is the most complete book on the thyroid that I have ever seen. There are fifty-two chapters in the book, fifty devoted to a consideration of the thyroid and two to a consideration of the thymus gland.

The first thirteen chapters consider anatomy, histology, embryology, tumors, physiology, biological chemistry, inflammations, anatomopathological relations of goiter, symptoms and diagnosis, varieties of goiter. The following thirty-seven chapters cover all phases of thyroid insufficiency and hyperactivity, endemic goiter, cretinism, Basedow's disease, etc., and give the symptoms exhibited by various organs and systems of the body, medical and surgical treatment, operative technic and postoperative complications. The last two chapters deal with the thymus gland.

The value of a book of this kind is so great that it is difficult to overestimate its value. The completeness of the work and the beautiful printing constitute its greatest attractions. The style, however, is decidedly stilted; instead of stating things in the simplest possible way, the author causes obscurity by a too close adherence to words of Latin origin and a decided dislike for any Anglo-Saxon word.

In a book of this size only one or two points can be commented upon. Crotti says that in both colloid and parenchymatous goiters vascular changes may become so prominent that the arteries and veins are considerably increased in size and number. In such cases an expansive pulsation is present all over the goiter, a thrill is felt on the main trunks of the arteries and a systolic murmur is heard all over the gland. This form is called, clinically, vascular goiter. It is usually found in connection with exophthalmic goiter. This vascular goiter, however, is sometimes observed in cases in which no thyrotoxic symptoms whatsoever are present. It is then known as the nontoxic vascular goiter. Such cases occur in girls about the age of puberty. Their rarity, however, is not indicated by Crotti. The great importance of a bruit and thrill in the diagnosis of exophthalmic goiter cannot be overstated.

Regarding malignant goiters: Metastases whether of epithelial or connective tissue origin may take place through the lymphatics or through the blood vessels. The general rule, a hematogenous route for sarcomata, a lymphatic route for cancerous tumors, does not hold good here. Cancer of the thyroid occupies the most prominent place so far as metastasis in bones is concerned. This occurs in 24.3 per cent of cases. In breast cancers bone metastasis occurs in 7.8 per cent; in uterine cancers, in only 3.4 per cent; in kidney tumors, in 3.7 per cent. In nine hundred and three cases of cancer of the stomach not a single metastasis in the skeleton was found. Metastases in bones, as a rule, are not multiple. One peculiarity of these malignant metastases is their ability to revert to the normal life of thyroid tissue; i. e., microscopic examination shows normal glandular structure. These metastatic cells may shape themselves into normal alveoli and secrete colloid. This is, of course, dissimilar to cancerous metastases from other organs.

Metastases from the breast do not secrete milk, nor does a metastasis from the liver secrete bile, nor does a metastasis from a cancerous kidney secrete urine. The removal of such a metastasis, after a complete thyroidectomy for cancer, gave myxedema in a case of von Eiselberg's.

The book as a whole is very comprehensive. It gives very accurately the ideas of Kocher in regard to the thyroid.

No references at all are given in the book. Sentences like the following are typical: "Hence the experiments undertaken by Roger and Garnier, Crispinio, Torri, De Quervain and others . . ."

If numbers were placed after each name with a reference to the specific article, the value of the book would be very much greater as a reference book, and this is what it aspires to be, an authoritative reference book on the thyroid. It will not be read by the average practitioner; rather by the man who is especially interested in the thyroid.

F. C. B.

The Practice of Pediatrics. By Charles Gilmore Kerley, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital, etc. Second edition, revised and reset. Octavo of 913 pages, 136 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$6.50 net.

This second edition has been thoroughly revised and brought well down to date by the inclusion of twenty-five new articles. Many chapters have been rewritten and, as the author states in his preface, "A great deal of old material has been removed and in its place has been substituted that which it is hoped will be of more service to the practitioner and student". There are so many good points in the book that it would be impossible to mention all of them in such a limited review. The book immediately attracts the reader's favor. The binding is blue cloth, the pages of the best paper, the type large and distinct, and the illustrations, of which there are many, deserving of special praise. The one thing in Kerley's work which preeminently arrests attention is the fearless manner the author assumes in discarding the old and worthless methods of procedure for the new and more effective methods. Delicate and innuendo stress of emphasis and special impressiveness is given to the author's opinion. But this fault or attribute, whichever it is, beautifully delineates the result of personal experience.

The first part of the work deals with the management, bathing and clothing of the infant, and the sick room; the new-born and its diseases, artificial feeding, milk modification and sterilization, the feeding and growth of the baby, diet for older children, the care of the mother's breasts and the care of the delicate child. The succeeding chapters are devoted to the diseases of childhood, and completely cover the subject of pediatrics including bacteriology, pathology, diagnosis, symptomatology, and treatment. Many illustrative cases are cited and the treatment of the patient at different ages is explained in detail.

Some of the new and rewritten subjects are: acidosis, acetonuria, anti-typhoid vaccination, the blood findings in poliomyelitis, neosalvarsan and mercury bichlorid in congenital syphilis, dyspituitarism, septic sore throat, heliotherapy in tuberculosis, vaccines in pertussis, Flexner's serum in cerebrospinal meningitis, and the Schick test in diphtheria. The book is well written and deserves a foremost place in the library of pediatrics.

H. C. L.

The Elements of the Science of Nutrition. By Graham Lusk, Ph.D., Sc.D., F.R.S. (Edin.), Professor of Physiology at Cornell Medical School New York. Third Edition, Reset. Octavo of 641 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$4.50 net.

The third edition of this useful book will find ready welcome by those who wish to have well balanced information concerning the basis and practical application of our knowledge of the science of nutrition. In the preface the author states that he has no intention of again revising the book because in another decade the development of scientific knowledge will probably permit the formulation of the subject from the standpoint of physical chemistry. It is to be hoped that progress may be sufficiently rapid to fulfill this interesting forecast. In the meantime the present volume must be regarded as a notable achievement which should be made available in every laboratory, diet kitchen and home in this country.

At the present time direct interest will center on the chapter on a normal diet, the new chapter on food economics with special reference to the war, the chapter touching upon the nutritive value of various materials used as foods, that on the food requirement and on the revised food tables.

The whole book is a splendid exhibition of the science of nutrition, as well as a demonstration of what one could do if he had the knowledge, the experience and the thoroughness that the author reveals in his text. J. L. M.

A Manual of Clinical Diagnosis by Means of Laboratory Methods. New (9th) edition by Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Physiological Chemistry in the University of Maryland and the College of Physicians and Surgeons, Baltimore, Md. Octavo of 854 pages, with 207 engravings and 28 plates. Cloth, \$6.00 net. Lea and Febiger, publishers, Philadelphia and New York.

This popular text book for the laboratory worker as well as for the clinician comes to us again in a new garb. Many sections have been rewritten and much new material has been added to keep abreast with recent progress.

In the chapter on the blood, the ancestral origin of the corpuscles, both red and white, and their interrelationship are given full discussion. As in the previous edition, there is an interesting exposition of the chemistry of the dyes employed in blood staining. Under technic of enumeration of blood corpuscles there is an illustration of the Thoma-Levy hemacytometer made in this country. We still find a description of the hematocrit, which is more of historical interest than practical value. The same may be said of Dare's hemo-alkalimeter which has been displaced by instruments which measure the hydrogen-ion concentration of the blood. A brief account is given of Van Slyke's method of determining the reserve alkalinity of the blood, also that of Marriott. The author also describes his method of testing donor and recipient for blood transfusion but makes no mention of the groupings. The colored plates throughout the book are of extreme usefulness to the student. The description of intestinal parasites and their ova is also very instructive. Attention is given to the newer methods of blood chemistry and colorimetric determination of certain urinary constituents, according to the technic developed by Folin and others. Lewis and Benedict's method of blood sugar determination, which is exact and easily carried out, is, however, not found in the text. A full des-

cription, with colored plate, of Lange's colloidal gold test of the cerebrospinal fluid is a timely addition to the wealth of material found in this book. As in previous editions, there is a chapter on bacteriology, giving the preparation of culture media and the characteristics of the principal pathogenic microorganisms.

Part two of the book gives the essential factors in the laboratory diagnosis of various diseases so that we see at a glance, by reference to the respective disease, the salient features of the laboratory findings in the examination of the body fluids.

Simon's Clinical Diagnosis in its new edition will undoubtedly be extended the same cordial reception as the preceding issues. P. H.

International Clinics; A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc., by Leading Members of the Medical Profession throughout the World. Edited by H. R. M. Landis, Philadelphia. Vol. IV, Twenty-seventh Series, 1917. Philadelphia, London. J. B. Lippincott Co.

The contents of this number of this well known publication are largely clinical reports. Military surgery is interestingly taken up by Albee, a series of orthopedic conditions is presented by G. G. Davis, and Bevan presents six surgical cases. Military fracture surgery is described in an article by Froger of France giving the modern methods of immobilization. Under the heading of Public Health, Saxon presents a paper on the question of food for war time consideration. Beverly Tucker presents a study of fifteen cases of brain tumor of obscure localization. This is a very interesting and readable number.

H. W. W.

The Surgical Clinics of Chicago. February, 1918. Volume 2, Number 1. With 73 illustrations. Published Bi-Monthly. W. B. Saunders Company, Philadelphia and London. Price per year, \$10.00.

The February number of the Clinics contains about the usual number of good articles. The first is a clinic given by Dr. E. Wylls Andrews and Dr. Charles Louis Mix on "A Case of Duodenal Ulcer; its Diagnosis and Treatment". The presentation illustrates very well how important the history of such a case is. The history is first given, then under examination five pages more of history is related. The only real examination is the eliciting of tenderness. The point is made that in gastric ulcer pain is felt immediately after food is ingested; in duodenal ulcer, two hours or so after eating. There is no food relief, Dr. Mix says, in gastric ulcer in contradistinction to food relief in duodenal ulcer. There is vomiting in gastric ulcer, but no vomiting in duodenal ulcer. In gastric ulcer the pain is said to be burning and not rhythmic, wave-like or colicky as in duodenal ulcer. The point is made that peptic ulcers are end-products of infection. They never become foci of distribution. Consequently an ulcer of the stomach and duodenum is not accompanied by headaches, fever, infections of the joints, coated tongue, or any signs of sepsis. An infected gall bladder is frequently the center for the distribution of infective material. Constipation is not the rule in gall stone disease but patients with gastric or duodenal ulcer are almost invariably afflicted with it.

Dr. Mix advises gastrojejunostomy for ulcers close to the pylorus, but does not advise opera-

tion for ulcers of the greater curvature or lesser curvature or in the fundus.

The preoperative diagnosis of ulcer of the stomach based upon marked loss of weight, epigastric pain, quick appearance of pain after meals and aggravation of pain by eating, lack of wave-like or rhythmic pain but presence of a constant burning, heavy feeling and tenderness in the epigastrium was not borne out by the operative findings of duodenal ulcer. The x-ray diagnosis of duodenal ulcer was confirmed.

Dr. Andrews did a posterior—no loop—gastroenterostomy between the pyloric region of the stomach and the beginning portion of the jejunum. The kind of suture material used is not stated. He believes contraction of the new stomach is due to puckering of the suture line, so in sewing the mucosa he puts in three stitches and then takes a back stitch to prevent puckering. The pylorus was closed with simple ligation.

The articles are all well worth reading. One rarely agrees with all the gospel promulgated in any clinic and the reading is thus even more valuable as it gives one food for thought, and stimulates one to get firmer support for his own view.

F. C. B.

The Medical Clinics of North America. Vol. I, No. 4. January, 1918. Published bi-monthly. W. B. Saunders Company, Philadelphia and London. Price, per year, \$10.00.

The Boston Number presents clinics from the Harvard Medical School, Massachusetts General Hospital, Boston City Hospital, Peter Bent Brigham Hospital, Children's Hospital and the New England Deaconess Hospital. There are twenty contributors, among whom are some of the foremost physicians of Boston.

This volume is initiated by Dr. H. A. Christian's clinics on Complete Heart-Block, Partial Heart-Block with Stokes-Adams Syndrome, and Digitalis Heart-Block in Auricular Fibrillation and Chronic Myocarditis. An exceedingly instructive series of cases are described which together with the splendidly reproduced electrocardiograms make this a praiseworthy contribution.

Dr. Elliot P. Joslin presents two interesting cases of severe diabetes with special emphasis on the treatment of threatening diabetic coma. This is followed by Dr. J. L. Morse's clinic on Empyema in Children. Dr. W. R. Graves then gives an able discussion of Ovarian Organotherapy. Of special interest is the case of Osteitis Deformans with Sarcoma of the Humerus by Dr. Edwin A. Locke. A clinic of Dr. Chas. J. White on Premature Loss of Hair follows; then appears an up-to-date discussion of Eczema in Childhood by Dr. Fritz B. Talbot. Vincent's Angina is then ably discussed by Dr. Harry A. Barnes. The contribution by Drs. George Leonard and O'Brien on The Roentgen Diagnosis of Disease of the Upper Right Abdominal Quadrant is deserving of commendation. The Early Diagnosis of Pulmonary Tuberculosis is discussed by Dr. John B. Hawes. Improvements in the Diagnosis of Chronic Ulcer of the Stomach and Duodenum is then described by Dr. F. W. White. An elaborate and excellent contribution by Dr. K. H. Thoma on the Relation of the Teeth and Jaws to General Medicine follows. The clinic of Dr. George R. Minot on Pathologic Hemorrhage deserves special mention, together with that of Dr. A. W. Sellards, whose consideration of Amebic Dysentery and Associated Conditions is excellently presented. Clinics of Dr. J. B. Ayer on Focal Transverse Lesions of the Spinal Cord and of Dr. Richard M. Smith on Pyelitis of Infancy then appear. The timely subject

of Protein Sensitization in Asthmatics is exceptionally well presented by Dr. I. C. Walker. The concluding contribution by Dr. G. W. Holmes on the Examination of the Heart and Great Vessels by Means of the X-ray is of special interest.

This number maintains the high standard of those that have previously appeared. J. L. M.

THE COLORADO STATE MEDICAL SOCIETY. OFFICERS, 1917-1918.

(Incorporated November 1, 1888.)

**The Next Meeting Will Be Held in Estes Park,
September 9, 10 and 11, 1918.**

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Editorial Comment

THE A. M. A. MEETING.

The meeting of the American Medical Association held last month in Chicago was the largest held since the one at that place ten years ago, the total number of Fellows registered being 5,553. The large registration was something of a surprise to those who had most to do with the arrangements for the meeting, especially as it must be remembered that probably one-fifth of the members of the Association were unable to attend because of their duties in various branches of government war service. That this many American physicians could be gathered together under the present circumstances illustrates two things.

First, the proportion of the medical profession that appreciate the value of medical society meetings is steadily increasing. The bulk of these members did not come to seek credit for new discoveries, or to exploit new instruments, or to get notoriety by reading a paper. There were only 334 names on the program, one in seventeen of those in attendance. The others came to get in touch with their colleagues, to learn what they were thinking and doing; as often on the street and in the hotel lobby, as in the formal discussions that took place in the Sections.

Second, these members of the medical profession were there in response to the call of patriotism, of interests as wide as the nation, as wide as civilization. There is no great difficulty at this time in getting a good medical society meeting, if it is sufficiently devoted to patriotic purposes and interests.

Patriotism was dominant in thought and feeling. It was not merely to see and hear the great war chiefs of the profession, Surgeon Generals Gorgas, Braisted and Blue, and their able lieutenants, such recognized leaders in every department of medicine as Billings, Mayo, Young, Casey Wood and Richardson. It was not merely to see and hear the great representatives of our allies, come to us from the firing line and the base hospitals in France, Sir William Arbuthnot Lane and Sir James Mackenzie from England and Scotland, Colonel Bruce from Canada, Captain René Sand from Belgium, and Justin Godart and Major Rist from France.

More than from such motives the members of the American Medical Association attended this meeting to learn their own duty in the great struggle, and to gain inspiration to do it: whether it be to leave family and friends and life work and face the exposure and danger of the front; or to close up the ranks at home by taking up the burden of every kind of practice, where one had begun to select the kinds of work he liked best, or by going back into full time when he had begun to retire and look forward to a period of ease. It was to see their duty more clearly by the light of the views and feelings of others who have to face the same questions that the doctors flocked to Chicago.

Patriotic feeling pervaded the whole meeting. But it came out most obviously in certain of the sessions, especially those that brought together the whole body of physicians in attendance. It appeared in the addresses of the opening meeting, as well as in the responses of the audience and the singing of patriotic songs. On the second evening, at the medical military meeting, it was

equally manifest in the crowds shut out in the street after the Medinah Temple, which holds six thousand, had been filled to capacity, and the doors closed by the police so that even holders of reserve seat tickets could not get in. It was manifested with even more serious purpose when the great Auditorium Theater was filled on Thursday to hear the plans that have been worked out for the reconstruction and rehabilitation of the disabled soldier.

On Thursday the regular section work of the Association was entirely suspended that all might attend the meetings devoted to this subject. This arrangement was the subject of adverse criticism; but a remarkably large proportion attended the meetings for which the section programs were interrupted. The subject is one of wide interest and general importance. What is learned in the effort to restore the crippled soldier to economic and social life can be applied in many directions in the rebuilding, or right building and education, of human beings not classed as defectives.

The meetings of the House of Delegates, the real business meetings of the Association, ran smoothly under the guidance of the speaker of the house, Dr. Hubert Work of Pueblo. On the reference committees of the house were Dr. G. A. Moleen on the Committee of Sections and Section Work, and Dr. H. G. Wetherill, Chairman of the Committee on Reports of Officers. On the floor of the house, Colorado was represented by Dr. Melville Black as alternate; both the delegates McKinnie and Plumb being absent in the service. The reapportionment of delegates made for the next three years does not change the number accorded to Colorado.

In the election of officers patriotic feeling again rose to the surface. The President-elect, Major Alexander Lambert, was to leave next day for his Red Cross work in France. His only serious competitor was Surgeon General Braisted of the Navy. Major Lambert's long service in the House of Delegates, Board of Trustees and Judicial Council has made him more familiar with the affairs of the Association than were most of his predecessors when honored with the office of president. The Board of Trustees

received a transfusion of new blood in two of the members chosen this year, Frank Billings of Chicago and Wendell Phillips of New York.

Colorado was represented at the Chicago meeting by sixty-two members, against forty-two from Massachusetts and thirty from the rest of New England. There were only fourteen states that showed a larger registration; and only one of these, California, is situated so far from the place of meeting. The great lessons enforced by the Chicago meeting are: that it is worth while to "carry on" in medical societies; and that their meetings can be made a most important agency in the arousing and directing of patriotic enthusiasm.

E. J.

DR. FARRAND IN FRANCE.

During his brief visit home to Colorado, Dr. Livingston Farrand, president of the University of Colorado, was greatly sought after for talks as to his work with the Rockefeller Commission in France, and he responded so readily to the calls made upon him that his speaking engagements must have been almost as frequent as those of a campaign orator. In addresses which abounded in the keenness, fascination, and enthusiasm for which he is noted, he told of the health conservation and reconstruction work which the Rockefeller Commission and the Red Cross, in tactful cooperation with various French voluntary agencies, have been carrying on in a country which was for a long time so absolutely absorbed in the bitter war for existence that it began to neglect safeguarding its civilian population against the ravages of disease.

Dr. Farrand reminded us that France at war for three years had naturally neglected vital statistics. Figures as to soldiers with tuberculosis were greatly exaggerated. Eighty-nine thousand instead of one hundred and fifty thousand were discharged on account of tuberculosis, and these mostly in the first year of the war. This was probably not a much greater number than would be found in civil life, only they had broken down under the sudden strain. But the

amount of tuberculosis in the civilian population was very much greater than had been reported, and was of course being increased by the conditions of undernutrition due to the war. In three years of war these conditions were beginning to tell, and they have told much more during the fourth year and will be greater during the fifth year and so on.

Into a population which was already supporting itself with more or less difficulty was thrust a population of refugees. The Germans began on January 1, 1916 to send back convoys of repatriés via the Rhine and Switzerland at the rate of one thousand a day. There are thus hundreds of thousands of these repatriés who have lived under German control for varying lengths of time, and their return increased the pressure of anxiety and lack of food upon the stationary population. Fortunately, most careful examinations among these repatriés did not show an excessive amount of tuberculosis.

Exaggerated reports of conditions caused by the war called attention to the existence of conditions which were just as bad before as during the war. This in its own way is fortunate. We now have the resources of America working side by side with such resources as were available in France to combat these conditions; and in addition to these resources we have a country aroused to its danger and anxious to be told what to do.

Dr. Farrand spoke of some other conditions which are very dangerous for France. Great anxiety had been felt as to the condition which presented itself to France in regard to its population. In 1913 the death rate of France had practically reached the birth rate. If a country is to survive its birth rate must keep well ahead of the death rate. A stationary population in numbers implies a slowly degenerating population in point of view of vigor. The birth rate of 1913 in France was cut in half after the war began, and the death rate has naturally gone up, so that now there is a death rate which doubles the birth rate. If that goes on for only a few years more, no matter what the outcome of the war may be, it means a people that is struck a vital blow. In his work at the head of the Rockefeller Com-

mission, Dr. Farrand conceived his task in France to be the task of preserving in every way possible the coming population. Nothing so affects the morale of a nation as the condition of the family. A man who sees his family suffering is the man who becomes a pessimist and throws up his hands in despair. Thus the biggest piece of work done so far by America in France has been through the Red Cross among the civilian population. It is the organization which has made American intervention a real thing to the French and also to the Italians.

With regard to tuberculosis work the Rockefeller Commission early decided to choose two regions, one an arrondissement of Paris with a very high death rate and in which practically no work was being done of any kind as regards tuberculosis, the second a country district without any large cities, but easily accessible to Paris.

Dr. Farrand declared that if he could only choose one means of fighting tuberculosis he would choose the visiting nurse. American visiting nurses with a fluent vernacular knowledge of French are very rare indeed, and there had been no visiting nurses in France. Some organizations which had started an attempt to train visiting nurses were diverted to the hospitals at the onset of the war. With the cooperation of these organizations a standard course for training visiting nurses in tuberculosis, a course of ten months to be carried out in an advisory capacity by the American organizers, was arranged, with scholarships for the pupil nurses. This successfully started in France the visiting nurse system in tuberculosis, which Dr. Farrand regards as worth by itself all the money that has been put in, even if the American organizations had to leave tomorrow.

The dispensaries which have been established in Paris and in the country are now being made a basis for the training of physicians in tuberculosis work. City after city of France is sending up its nurses to be trained in the nineteenth arrondissement of Paris. The city of Bordeaux and the department of the Gironde (in which Bordeaux is situated) neither of which has ever touched the tuberculosis problem before,

are now rapidly working out the problem on the most modern basis, and have provided money for dispensaries and for a sanatorium. Training centers for nurses have been established at Lyons and Bordeaux, and steps are being taken to do the same thing in Marseilles. From these centers it is intended to radiate out through the various departments of France. The Rockefeller Commission formulates the policy and reserves to itself the training of nurses and physicians. The Red Cross holds itself ready to take care of the necessary relief work, for example in regard to refugees or repatriés, and provides any additional hospital beds that may be necessary.

The problem of infant mortality is being dealt with on the same broad scale. Most dramatic have been the experiences associated with an educational campaign conducted since last January by the Red Cross and the Rockefeller Commission. This campaign, which started at Chartres and is progressing slowly towards Brittany by motor truck, carrying a Frenchman to lecture, French and American women demonstrators, moving pictures, educational panels, and illustrated literature, has attracted the most enthusiastic audiences wherever it stopped; the whole population sometimes turning out to see and hear what the Americans are doing. A giant child welfare exhibition at Lyons attracted one hundred and seventy-three thousand people, twenty per cent of the population of Lyons and its working class environs. This was between April ninth and thirtieth, at the height of the German offensive.

A French woman who has been working with the Red Cross expressed her feelings in these terms: "You have desired not only that we shall win the war, but that France shall live, live fully during the war and afterwards. It seems to me that the wish of the Red Cross and of the whole American nation has been not only to maintain the integrity of French territory but the moral and intellectual integrity of France."

The twenty-eighth annual session of the New York and New England Railway Surgeons will be held at the Hotel McAlpin, New York City, on October 21, 1918. A symposium will be presented on The Modern Treatment of Infected Wounds.

CHILD RIGHTS VERSUS STATES' RIGHTS.

In spots, but only in spots, the social legislation of this country is abreast of the best that has been enacted by European nations. In many directions we are still unfortunately bound by the restrictions more or less unconsciously imposed by a constitution framed in the infancy of our national development, and interpreted today by a small group of lawyers whose method of appointment places them beyond control by the popular will.

For twenty years an effort has been made to establish for the nation at large a minimum regulation of the age at which and the conditions under which children might be hired out to work. As regards the children of some states such a national law was of course superfluous, since those states had developed sufficient public intelligence and humanity to pass such laws for themselves. There still exist however a few states of this Union in which private greed has so far succeeded in blocking all endeavors toward this end. The children of these states, if stunted or diseased in mind or body as the result of the conditions under which they were placed during the growing period, may subsequently carry to other states, for their own and future generations, the defects and degeneracies which those other states by their enlightened legislation have sought to avoid. Furthermore, no national restriction is placed upon competition between the products of cheap and inhuman child labor and those of more humane sections of the country.

These were the evils which the congress of the United States sought to abolish by the passage of a child-labor law. But five out of nine members of the same Supreme Court which not long ago determined that the wages of railroad employees were a fit subject for national legislation have ruled that the conditions of child labor do not belong to the province of the national congress.

Before the outbreak of the present war, a movement was definitely on foot for the establishment by international agreement of international standards in this very matter

of child labor. According to the recent decision of the Supreme Court, when this movement is renewed after the cessation of hostilities it will be impossible for the government of the United States, almost alone among the nations, to enter into such an arrangement.

Considering that the child labor law was virtually repealed by a vote of five men against four others of presumably similar intellectual and technical training, it is possible to think of the Supreme Court as a special legislative body, since it is clear that we are dealing not with an exact interpretation of absolute legal right and wrong from which there is no escape, but with the bias of individual minds. Some writers in the public press do not hesitate to suggest that the action of the majority of the court was inspired by fear; not personal fear, but fear of the larger possibilities of national social legislation. Is it right that this kind of personal bias, and this kind of fear as to the tendencies of modern legislation, should possess the power to control the law-making of a nation of more than one hundred million people for a generation?

Mr. Justice Holmes, speaking for the minority, which was composed of himself with Justices McKenna, Brandeis, and Clark, delivered a judgment diametrically opposed to that of the majority. He says: "The Act does not meddle with anything belonging to the States. They may regulate their internal affairs and their domestic commerce as they like, but when they seek to send their products across the State-line, they are no longer within their rights.

The national welfare as understood by Congress may require a different attitude within its sphere from that of some selfseeking state."

Many of us have viewed either with positive disapproval or at least with reluctance and reserve the movement for the popular recall of judges and of judicial decisions. It is to be feared that such events as the recent Supreme Court decision against the child labor law will tend rather to accelerate than to retard this ultra-modern agitation.

THE MOSQUITOES OF COLORADO.

Most physicians of Colorado are probably apt to assume that there is no risk of infection from malaria in this state. No one who has gone on a fishing trip along our mountain streams, or who has even sat out of doors near his own home about sundown, will wish to deny that there are mosquitoes in this state. Most of us, however, are pretty definitely satisfied that the malaria-bearing variety is not to be found here.

The question of local freedom from malaria has at the present time a special importance as a consideration in the selection of sites for training and recuperation camps for the United States army. For this reason Professor T. D. A. Cockerell of the University of Colorado recently undertook an inquiry into the distribution and classification of mosquitoes in this state. It is apparently not correct to suppose that *Anopheles* does not occur in the Rocky Mountain region, but the only part of the state in which this species has been observed is Delta county. Professor Cockerell states that in Colorado east of the mountains, as well as in the mountains, *Anopheles* is either absent or, if locally present, is so rare that it could very easily be dealt with.

It is probable that at least some of the army training camps in the south are so placed that the men in them are exposed to malarial infection. The position of Colorado in this relation ought, it would seem, to serve as a further argument for the placing of training camps and recuperation camps here, especially on the eastern slope. Professor Cockerell states that the valley of the Rio Grande not far distant from Camp Cody, New Mexico, is malarious. The study of the situation in Colorado is still capable of more detailed investigation, but special funds are lacking for the purpose. The United States government does not so far appear to have conducted any researches along this line.

Forty-four persons totally blind from the Halifax disaster are under instruction, either in the School for the Blind at Halifax or at home, under special teachers. Seven hundred and sixty is the total number of eye cases thus far recorded from the explosions in Halifax.

Original Articles

ACUTE CHOLECYSTITIS.*

Z. H. McCLANAHAN, M.D., COLORADO SPRINGS.

Few in the profession now have the temerity to openly champion medical as opposed to surgical treatment of gallbladder infections, yet through acts speaking louder than words, not a few are shown still to favor medical measures. While this remains true, the service most to be desired from the discussion of any phase of this subject is that the frequent repetition and emphasizing of the fact that gallbladder disease is essentially surgical may early lead to its being universally so recognized. Any discussion which darkens this basic fact with words must prove detrimental.

The difference between drainage and removal as regards mortality is insignificant as compared with the mortality attributable directly or indirectly, through degenerations, to the neglect or late application of surgical measures.

Owing to laboratory and animal experimental work, views regarding the most frequent avenues of cholecystic infection have recently undergone no little change. The formerly widely held view that the portal and ascending biliary avenues were usual has largely given place to the more probably correct theory of the so-called "rear attack" or hematogenous invasion of the mucous membrane, a theory seemingly proven by Rosenow as applicable to many cases. Rosenow's work has shown the bacteria of local infection to have as distinctively selective an affinity as have the bacteria of the general infectious diseases.

No more interesting or instructive fact in its relation to both etiology and treatment has been demonstrated than that regarding the site of the infection. It has been shown that the bacteria capable of reproducing cholecystitis when introduced into the circulation of a lower animal are but occasionally found in the liquid con-

tents of the gallbladder, while regularly found in its tissues.

The work of Rosenow and others conclusively shows that the focus of infection is of primary importance, and gallstones, so long considered to be the all in all, of only secondary importance in the etiology of gallbladder disease. As Dr. Deaver has expressed it, "If it were understood that the infection is the back, bottom and sides of this Pandora's box of upper abdominal troubles, there would be less difficulty in pointing out that gallstones are but a single sequel, and by no means the most important one of this condition".

Infection of the gallbladder by way of the portal circulation, the bactericidal action of the liver having been overpowered so that bacteria are allowed to pass on to the gallbladder through the liver and the hepatic duct, probably occurs less frequently than was formerly taught. The possibility of infection ascending from the duodenum and reaching the gallbladder by way of the bile passages has, seemingly, been proved; but evidence that the duodenum is normally almost free from bacteria makes frequency of infection from this source most unlikely. In case it enters through the lumen of the cystic duct the infection, granting the correctness of the teaching of Rosenow, must still pass through the lining mucous membrane, which, like similar structures of other hollow viscera, offers marked resistance to such invasion.

Dr. Mayo cites as illustrative the fact that infected urine may pass through the urinary bladder for a great length of time before there is any evidence of infection of the bladder itself. He also, however, without stating it to be the fact, suggests the possibility of such infection, especially in the presence of stagnant bile, becoming a focus for stone formation without an infective involvement of the gallbladder wall.

While our habit of thought as applied to disease in general leads us to think of acute disease as being an early stage of disease, the term as applied to gallbladder infection is misleading, and the so-called acute gallbladder infection, is, as a rule, an acute ex-

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

acerbation of an old infection. I believe that it can be truthfully said that, with very few exceptions, we do not recognize the early stage of cholecystitis, that stage without local symptoms and showing only cholecystic indigestion. The disease reaches the second stage, or that in which pain occurs from the presence of calculi or from acute inflammation, or even the third stage, in which dangerous complications, such as empyema, gangrene, perforation or acute peritonitis occur, before surgery is resorted to or, as I think is quite often the case, even advised.

The occurrence of a third stage of cholecystitis, as Dr. Wayne Babcock has said, is "a reproach to our medical art and indicates an average procrastination in effective treatment of about twenty years".

The third stage patient is usually thirty-five or more years of age when operated upon. The youngest patient upon whom I have operated was a woman of twenty-six who at operation was found to have, plus cholecystitis, an involvement of the head of the pancreas. I performed cholecystostomy on a woman of thirty-six a few months ago during the third week of mild typhoid, which disease had, I believe, acted as an exciting cause of acute, even fulminant, cholecystitis. Notwithstanding the fact that the gallbladder contained a number of gallstones and that she had suffered from digestive trouble for several years, this patient would likely have suffered these discomforts for several years longer before coming to operation had it not been for the intercurrent typhoid, as she had not even consulted a physician prior to the occurrence of the latter infection.

The recent introduction by Rosenow and others of new evidence, already mentioned, bearing upon the route by which infection reaches the gallbladder and, particularly, upon the site of infection in the gallbladder, seemingly justified the shifting of opinion, so evident during the last few years, regarding the treatment of these infections; a change which was, however, undoubtedly taking place empirically prior to the introduction of this evidence. As we know, many surgeons of wide experience have been

employing cholecystectomy tentatively in a gradually increasing number of cases during, I should say, the last ten years. At a clinic given at the Denver County Hospital by Drs. Hall and Freeman, jointly, during the annual meeting of this society no less than eight years ago, Dr. Freeman, after performing cholecystectomy, spoke of the increasing frequency with which he employed this operation.

Drainage, until within the last five to eight years considered the established therapeutic measure in surgery of the gallbladder, is now being employed in a progressively lessening number of cases, while cholecystectomy is gaining in frequency of employment in proportionate ratio. The fact that the most frequent site of infection has been shown to be the gallbladder wall makes this a rational change and cholecystectomy the rational treatment in the absence of certain contraindications. The fact, too, that the more acute condition is a sequel to and rests upon a foundation of chronic disease, which in frequent instances has resulted in degenerative changes in the gallbladder, lends to the expectancy of more favorable results from removal than from drainage.

Pancreatitis is accepted by all as contraindicating cholecystectomy, owing to drainage being the one recognized therapeutic measure in this disease. In two cases I have chosen drainage owing to the presence of this complication. In one cholecystectomy was indicated aside from the involvement of the pancreas. In the other the acute gallbladder disease would have led me to choose drainage even in the absence of involvement of the pancreas.

Granting then that cholecystectomy is the ideal procedure, I believe that drainage still unquestionably has a field of usefulness in the superlatively acute cases where the immediate prevention of mortality is of first consideration. I believe that in acute septic cases, especially in the presence of complications adding to the difficulty of removal (and cholecystectomy may be a most difficult operation), drainage, quickly done, should be the operation of choice with a surgeon of average experience and skill.

In such cases it may be well to inform

the patient that a second operation may be necessary. Of five acute septic cases, in all of which I feared, at the time of operation, that there would be later trouble, and in three of which I informed the patient that later operation might be necessary, only one has since shown symptoms and those have not been sufficiently severe to induce her to consider another operation. (This patient was operated upon eight months ago.) In one of these cases two stones were subsequently discharged into the dressings. These of course may have come from the gallbladder wall, in which case they would have been removed if cholecystectomy had been performed. In all five cases the infection was unusually acute, with high temperature and the symptoms ordinarily accompanying high temperature. I believe that all could be considered septic cases. In two there was marked edema of the omentum adjacent; in one there was considerable necrosis at the fundus; in one, an empyema sufficient to carry the fundus two and a half inches below the umbilicus. With one exception gallstones were present. In each of these cases cholecystectomy would have been difficult, would have required more time, and I cannot but believe, in my hands or in the hands of the surgeon of ordinary skill, would have given some mortality.

In this, as in other surgical problems, the importance of the personal equation is no doubt frequently underestimated. While it seems peculiarly difficult for the surgeon to recognize and often costly for him to admit that the master surgeon is able to get results from a given operation which he, through lesser skill or lack of familiarity with the operation cannot hope to get, yet until the operator is willing, after having honestly weighed it, to allow to this equation its full value as a factor in the choice of operation, the results of surgery in this field cannot reach the highest possible mark. The results of surgery in the aggregate rest more largely upon the work of the average surgeon than upon that of the master. This is especially true of acute cases, the class of cases that cannot be operated wholly by the surgeons of vast experience; a fact

probably favoring their statistics, as compared with those of the surgeons of more modest practice, more largely than is ordinarily recognized.

CHOLECYSTECTOMY VERSUS CHOLECYSTOSTOMY.*

F. N. COCHEMS, M.D., AND A. J. BENDER, M.D.,
SALIDA.

It is generally conceded by those doing abdominal surgery that there are definite indications for complete removal of the gallbladder. It is also generally agreed that there are certain indications for simple drainage of the gallbladder rather than its removal, just as there are times when an appendiceal abscess is drained without searching for the appendix and the cul-de-sac of Douglas is opened to afford drainage for pyosalpinx.

The cases reserved for simple drainage are the acutely inflamed gallbladders with or without stones, when the condition of the patient does not warrant a prolonged operation or when there are encountered technical difficulties which render the removal of the gallbladder hazardous.

The following conditions furnishing indications for cholecystectomy, enumerated by Lund¹, seem worthy of being quoted:

First, the acutely inflamed, bright red or gangrenous gallbladder, due to the impaction of a stone in the cystic duct.

Second, cases of gallbladder very much distended with clear fluid from the impaction of a stone in the cystic duct, associated with stricture or ulceration.

Third, in cases of chronically thickened gallbladder in which the walls cannot contract, thereby causing stagnation of the bile or persistent mucous or biliary sinuses.

Fourth, in chronic cholecystitis without stones but with thickening and ulceration of the mucous membrane.

Fifth, in chronic cholecystitis without stones but with adhesions to the surrounding organs, especially the pylorus.

These are not the classes of cases on which there is a great diversity of opinion

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

as to the line of treatment that should be instituted. The cases in which the gallbladder contains stones with the gallbladder in an apparently normal condition, elastic, free from adhesions and the patient in good condition are the ones that give rise to what we consider the paramount question to be decided in dealing with this class of cases: "Shall we remove the stones and drain the gallbladder, or shall we remove the gallbladder with the stones?"

For the purpose of obtaining the current opinion of the men doing abdominal surgery, a personal communication was addressed to a number of the leading surgeons of America, stating the following hypothetical condition and asking the questions which follow: "Given a case in which the gallbladder contains stones, the gallbladder being elastic and free from adhesions and the patient in good condition: What line of treatment do you follow? Do you remove the stones and drain the gallbladder or do you remove the gallbladder with the stones?"

Before presenting the views of these individuals, as expressed in their replies, a brief reference to the arguments for and against the removal of the gallbladder may be appropriate.

By a careful review of the most recent literature, which is quite voluminous, on the subject of cholecystectomy, we find that there are many reasons why a diseased gallbladder may be sacrificed and but very few are given for the absolute necessity of its conservation. The principal factors to be considered in determining whether or not the operation of cholecystectomy or cholecystostomy should be performed are:

First, Specific function of the gallbladder.

Second, Relative mortality following the two procedures.

Third, Percentage of cures.

Fourth, Recurrence of gallstones.

Fifth, Persistence of infection.

Sixth, Technical skill and experience of the operator.

Seventh, Complications, such as troublesome adhesions, permanent fistula and pressure necrosis.

The function of the gallbladder and its importance to human economy has recently been referred to by Porter². During its stay in the gallbladder, there are added to the bile combined salts and other ingredients amounting to four parts in one hundred of bile. These added products consist of mucus, nucleoalbumin, sodium glycocholate and sodium taurocholate, all of which contribute the active power of the bile in the process of digestion.

According to Mayo³, the function of the gallbladder is that of a reservoir, elastic, capable of expanding and contracting rhythmically, pumping bile into the intestines intermittently, overcoming the ring sphincter muscle at the ampulla. This function of the gallbladder may, in a measure, be taken up by the ducts. It has been shown by the experiments of Judd and Mann⁴ that after cholecystectomy the gradual increase in pressure causes dilatation of all the extra-hepatic ducts, varying from a slight degree to two or three times the normal diameter of the ducts. This conclusion (to which reference will be made later) has been confirmed by Halstead who observed in two cases after cholecystectomy the diffusion of portions of a barium meal throughout the dilated common and hepatic ducts; and he points out the danger of food doing the same thing.

The question of mortality is in reality not an important factor in deciding upon the relative merits of the two types of operation, and, as stated by Deaver⁵, is as nothing compared with the mortality due to the local diseases and the general condition of the patient. He also points out that formerly the mortality of cholecystectomy in his hands was distinctly larger than that of cholecystostomy, but in later years the condition has reversed itself, the cases of simple drainage having a greater percentage of deaths than those of the removal of the gallbladder.

In a table of the relative mortality of cholecystectomy and cholecystostomy given by Mayo⁶, the total number of operations from 1907 to 1915 in which the gallbladder was removed was two thousand four hundred and ninety-three, with a mortality of

one and three tenths percent; and the total number of cholecystostomies was two thousand eighty hundred and fifty-four, with a mortality of one and five tenths percent, showing two-tenths percent less in the cases of extirpation than in those of simple drainage.

Mayo³, in a series of forty-three cholecystostomies, had a mortality of fifteen percent, one half of the deaths being those of patients with cancer; and in a series of seven hundred and seventy-six cholecystectomies had a mortality of one and seventy-seven hundredths percent. This is in keeping with the statement made by Deaver that "the mortality is dependent upon the local disease and the condition of the patient, rather than the type of operation".

The percentage of cures and improvements is slightly greater after cholecystectomy than after cholecystostomy. Mayo⁷, in a series of two hundred and forty cases of cholecystostomy, found that there were fifty-three percent cured, thirty-eight percent improved and nine percent unimproved; whereas, after cholecystectomy, in a series of two hundred and nineteen cases, there were seventy percent cured, twenty-two percent improved and seven percent unimproved.

In a series of one thousand one hundred and eighty-nine operations on the biliary tract cited by Deaver⁵, fifty-one cases had had one or more previous similar operations. In forty-one of these, the primary operation had been cholecystostomy and in eight, cholecystectomy.

Although recurrences are not the rule, they do very frequently take place and as incontrovertible proof, Deaver⁸ cites a case in which he removed one hundred calculi from the gallbladder and a few months later two hundred more were removed from the same case by another surgeon. Erdmann places the frequency of recurrence at from two to ten percent.

A very important reason why a diseased gallbladder should be removed is that it eliminates the source of infection, which generally lies in the wall of the gallbladder, as has been shown by the recent work of Rose-now⁹ on the persistence of bacteria in the

wall of the gallbladder. He found that by injecting into animals bacteria cultivated from the gallbladder of patients suffering with cholecystitis, a condition similar to that was produced in about sixty percent of the animals injected.

It requires a little more time and greater technical skill on the part of the operator to remove the gallbladder than it does to drain it.

Three types of complications may be mentioned which occur more frequently after cholecystostomy than after cholecystectomy; they are: adhesions, permanent fistulae, and pressure necrosis. One of the principal arguments advanced for the conservation of the gallbladder is that it will serve as a guide in the search for overlooked stones in the common duct in secondary operations. This argument is not valid, for there should be no difficulty in locating the common duct after cholecystectomy as there are fewer adhesions and the duct, as has been shown by Judd⁴, is considerably dilated. Persistent biliary or mucous fistulae which sometimes occur require secondary operations, thereby placing the patient's life twice in jeopardy. Stiff rubber drainage tubes, so commonly employed, occasionally produce pressure necrosis which may give rise to a duodenal fistula. Ochsner has dispensed entirely with rubber tubing, substituting gauze, which does the work as well and is less dangerous.

As a contribution to the present-day views upon the choice between cholecystectomy and cholecystostomy, we shall here present brief abstracts of the communications received in reply to the hypothetical case and the questions previously mentioned:

A. E. Halstead, Chicago: "Drain the gallbladder after removing the stones. If it is of unusual size or occupies an abnormal position by which it fails to empty properly, remove such part as will restore the organ to its normal size and position. Cholecystectomy is reserved for cases where there is no question concerning the serious nature of the process in the wall of the bladder, where, in my judgment, the damage is irreparable. Cholecystectomy is a much more serious operation than is cholecystostomy or partial cholecystectomy. It does not give the relief

that some surgeons would lead us to believe follows this operation of cholecystectomy. I have seen two cases in which a barium meal given some time after cholecystectomy diffused itself throughout the large bile ducts. This was undoubtedly due to the distention of the ducts that we all have seen following cholecystectomy. If barium will pass readily, under ordinary conditions, into the common and hepatic ducts, why will not foods do the same?

"E. R. LeCount says that he has a large number of gallbladders sent him labeled 'Gangrenous Cholecystitis' that upon examination are found absolutely normal. He also states that in no other abdominal organ (hollow organ) is the tract so resistant to infection and in no other does a return to normal occur so frequently. This organ is in no way analogous to the appendix".

Rudolph Matas, New Orleans: "My practice in such a case would be to do a cholecystostomy, clean the gallbladder of calculi, and drain. I do not believe in cholecystectomy as a routine procedure, and only extirpate the gallbladder whenever I am satisfied that it is irreparably damaged and functionally useless".

John B. Deaver, Philadelphia: "Under such conditions I remove the gallbladder if there is enlargement of the glands in relation to the cystic and common duct and the peripancreatic glands; in the absence of enlargement of these glands and if the interior of the gallbladder to the eye is diseased, I remove it. In a small percentage of cases, other things being equal, I drain".

W. W. Richardson, Los Angeles: "My policy recently has been to remove the gallbladder with the stones, when it can be done easily and without prolonging the operation; if, however, the gall bladder is difficult to bring up on account of the size of the patient, or if the operation has been unduly prolonged, to drain it".

E. S. Judd, Rochester: "In most cases of this kind, it is better to remove the gallbladder, as its tissues are infected. Removing the stones and draining will apparently cure some of these patients. However, the percentage of cures is much larger if the gallbladder is removed. If a cholecystec-

tomy is done the mortality is no higher and the convalescence is much easier. Sacrifice of the normal gallbladder is not justified under any circumstances, as our experimental work shows positively that it has a definite function. However, in order to cure patients who have had gallbladder diseases, it is necessary to remove the gallbladder even if it does not contain stones. If it could be proven that the liver and bile stream are responsible for the infection, then it would be better to do a cholecystostomy. In most instances, the infection is actually in the tissues of the gallbladder".

Howard Lilienthal, New York City: "My practice would be to remove the gallbladder, and even without symptoms I should probably remove the appendix as well".

Robert T. Morris, New York City: "Treat the gallbladder as you would the appendix. Remove it, as a rule, whenever it is infected".

Albert J. Ochsner, Chicago: "If the cystic duct is not impaired, I remove the stones and pack the gallbladder with gauze, which is removed on the fifth or sixth day, but I do not drain with rubber tubing. I have found that by using the gauze patients do not have trouble later on; while, when using the rubber tubing for drainage, a patient of the same class is almost certain to have trouble".

John F. Erdmann, New York City: "It is customary for me at the present time to remove practically every gallbladder that I open the abdomen for. Now and then, in the case of pancreatitis, or where the findings are such that a two step operation is indicated, I proceed with only a cholecystostomy. The reason on my part for doing 'ectomies' rather than 'ostomies' has again just been brought strongly to bear upon my actions. This morning I removed a gallbladder from a patient upon whom five years ago I did an 'ostomy'. There was a re-formation of stones, five small ones being found, and an acute cholecystitis three weeks ago. This occurred in my experience in about two to six percent of the cases in which we did an 'ostomy' instead of an 'ectomy'. If we saw all of our cases subsequent to operation, our recurrences would

be from two to ten percent. Many patients become discouraged on recurrence of their disease and go to some other physician or surgeon".

W. T. H. Baker, Pueblo: "My plan is to remove the stones and drain the gallbladder".

Willy Meyer, New York City: "A gallbladder such as you describe should be removed".

Wm. B. Craig, Denver: "I remove all gallbladders that are, in my opinion, irreparably diseased, provided the condition of the patient warrants it. If, on the other hand, I believe the bladder capable of restoration to functional activity, I do not sacrifice it".

John P. Lord, Omaha: "In gallbladders such as you describe, it is my custom to drain. I remove gallbladders only when they are septic and thickened and show more pathology than described in your hypothetical question".

Alexis V. Moschcowitz, New York City: "I remove the gallbladder in all cases in which an operation upon the gallbladder is indicated. Upon the rarest occasions only, I am sure in less than one percent of the cases, is exception made to this rule".

L. L. Jones, Battle Creek: "It has been our experience here that where the gallbladder was drained, sooner or later, the patient would return with just as serious or even more serious trouble than before the operation. I believe, in the case you mention, that we would remove the gallbladder".

H. G. Sloan, Cleveland: "Remove stones and drain the gallbladder".

A. E. Rockey, Portland: "As a rule I remove the gallbladder, depending on the condition of the patient and the changes of the gallbladder. Two other factors must govern the surgeon. If his experience is limited, remove the stones and drain the gallbladder. If his experience is large in surgical technic and he has the advantage of good assistants, it is better to do a cholecystectomy. A necessary requirement to this operation is that no stones be overlooked".

J. E. Moore, Minneapolis: "Under the

conditions mentioned in your letter I have always removed the stones and drained the gallbladder. In a few instances I have had occasion to regret this procedure, because the gallbladder gave trouble and I had to perform a second operation to remove it. I am still under the impression that cholecystectomy is being done rather indiscriminately".

K. A. J. Mackenzie, Portland: "In the condition referred to in your letter, my practice is to remove the stones and drain the gallbladder".

Conclusions.

Cholecystectomy is the operation of choice in the majority of operations on the diseased gallbladder. W. H. Mayo¹⁰ states that it is indicated in eighty percent of all cases of gallbladder disease, while Bevan¹¹ places it at ninety per cent.

The definite indications for cholecystectomy are: chronic cholecystitis, injuries, ulcerations, perforations and gangrene of the gallbladder, persistent fistulae and primary malignancy.

There is a tendency of most present day operators to advise the removal of the gallbladder in cases of simple cholelithiasis when the patient is in good condition and the gallbladder but slightly changed.

The advantages are: easier convalescence, fewer adhesions, greater percentage of recoveries, diminished number of recurrences and lower percentage of mortality.

The disadvantages are: the destruction of the special function of the gallbladder, and the overlooking of common duct stones or stricture.

Cholecystostomy would be the operation of choice in many cases of acute cholecystitis, stones in the hepatic and common ducts, acute pancreatitis and when gallstones are accidentally discovered during the course of operations on other abdominal organs.

Red Cross Hospital.

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DISCUSSION.

H. S. Henderson, Grand Junction: In the operation of cholecystectomy the pendulum has swung too far backward, for cholecystectomy was done oftener formerly than cholecystostomy, and during the next few years cholecystostomy was the operation of choice. Now, it seems, the pendulum has swung back the other way again, and it does seem that cholecystectomy is done oftener than it should be done in a great many instances, for the gallbladder has a use when it is not damaged. Cholecystectomy is necessarily indicated in the case of a damaged gallbladder, where the mucous membrane is injured and does not secrete, or in what is commonly called the strawberry gallbladder, or when there is any obstruction in the cystic duct that has been produced by a stone that has been left lodged there for a long time and has destroyed the mucous membrane to such an extent that if you removed the stone and simply left the gallbladder, it would form a constriction. The removal of the gallbladder is indicated also in malignant disease; but the indiscriminate removal of all gallbladders because they have stones or inflammation, I do not believe is good surgery. If you can drain it, and the ducts are patent, it certainly seems to me the wisest thing to do is to perform only cholecystostomy and leave the gallbladder.

Leonard Freeman, Denver: This is a very old question. It has given rise to many papers and controversies in medical societies from time to time. I think that most of us are pretty well convinced that the subject has been settled, but perhaps it is wise once in a while to bring it up again. However, I believe the consensus of opinion today is that cholecystectomy is a better thing to do than cholecystostomy. It is better to take out the gallbladder than it is to drain it, provided you recognize two things: first, that you can take the gallbladder out with reasonable safety to the patient, and second, that the common bile duct is in no way obstructed, or is not going to become obstructed. We must recognize all the time, of course, that there are cases in which the gallbladder is so bad that we are willing to run some risk in getting it out. These cases are not extremely common. The reason for draining the gallbladder, instead of removing it, is that it is supposed to have a function. I presume that it has, but people who have had their gallbladders taken out get along pretty well, if we may judge by the results and not by theoretical considerations.

In these papers cholecystectomy and cholecys-

tostomy have been considered. There is another operation that has been growing in popularity a great deal in this country and abroad, and that is what is known as the "ideal operation". A great deal of sport used to be made of the ideal operation, and it was strongly advised against. This ideal operation consists in opening the gallbladder, taking the stone out, sewing the gallbladder up tight, and dropping it back into the abdomen, with perhaps a safety valve in the shape of a tube attached to the outside of the closed gallbladder by a small piece of catgut as a precaution in case of leakage. I have done this many times; I have not seen any leakage yet. I prefer to have such a tube attached. An operation of this kind might not be considered under ordinary circumstances, but it comes in very conveniently in case that you are doing some other piece of extensive work in the abdomen; for instance, the correction of some pelvic difficulty in which the patient has pretty nearly reached the limit and you are afraid to do much more, and you discover a large gallstone in the gallbladder. It is then easy to pass a hand up in the abdomen, press a finger against the abdominal wall just below the ribs, make a button-hole incision, push the gallbladder up through the buttonhole incision, remove the stone, sew up the gallbladder and drop it back into the abdominal cavity. One would not do this often unless it were a single gallstone and unless the gallbladder seemed to be in a perfectly good condition.

We are beginning to understand that a gallbladder, with a normal open cystic duct, and a normal open common duct, will drain perhaps pretty nearly as well through the normal passage which nature has provided as it will through a tube. As one of the gentlemen here has emphasized in his discussion, Dr. A. J. Ochsner has called attention to the fact that if drainage tubes are put into the gallbladder patients often have trouble afterwards.

M. O. Shivers, Colorado Springs: I desire to touch on a phase of acute gallbladder trouble that I discussed with Dr. McClanahan this morning.

During the early part of 1917 we had in Colorado Springs a mild epidemic of typhoid fever; the exact number of cases I am not able to give you, but among that class of patients we had quite a number of acute gallbladder cases that seemed to demonstrate in a way the peculiar selective action that certain bacteria have for certain organs. We had entirely too many gallbladder cases for the small number of typhoids. The number operated upon I am not able to give you, but out of a small number of typhoid cases seen by me there were four frank cases operated upon. Dr. McClanahan mentioned one of the typhoid cases this morning. Three I operated upon, one of which I will report. The patient was a child, aged nine years, who had a frank case of typhoid fever. On the ninth day it had distress in the right upper abdomen, and about the eleventh day a frank gallbladder infection with all of the classical symptoms.

This case was operated upon on the fourteenth day of the illness. There was pus and no bile in the gallbladder. The patient recovered. I think it is probably one of the youngest cases reported, and that is why I mention it. One was operated upon on the twentieth day of the illness, a man, twenty-nine years of age, who went to the operating room in a very serious condition. His pulse was 150, temperature 106°; there was pronounced jaundice. Several practitioners saw the case, and it was a question whether to operate or not. Operation was deferred twenty-four hours on ac-

count of illness. Two of the cases were drained. A third case was operated upon on the twenty-eighth day of illness. The patient was a woman, twenty-five or thirty years of age, whose gallbladder was removed. Out of three cases operated upon, one had stones, the man who was very sick and had a temperature of 106° and pulse of 150.

It occurs to me that from what has been said by the essayist we should emphasize this fact, that cholecystectomy has its field of usefulness, and cholecystostomy has its field, and it is purely

a case of surgical judgment as to what must be done when we get inside the abdomen.

J. G. Hughes, Greeley: There is just one point I would like to mention in connection with the operation of cholecystectomy that may aid in the recovery of the patient, and that is, where you get infection and do a drainage operation, the chance of healing taking place and recovery ensuing is enhanced considerably by the use of vaccines. When you have open drainage, if you administer an autogenous vaccine made from the gallbladder, the percentage of recoveries is improved, in my judgment.

THE FUNCTION AND FATE OF A BONE GRAFT.*

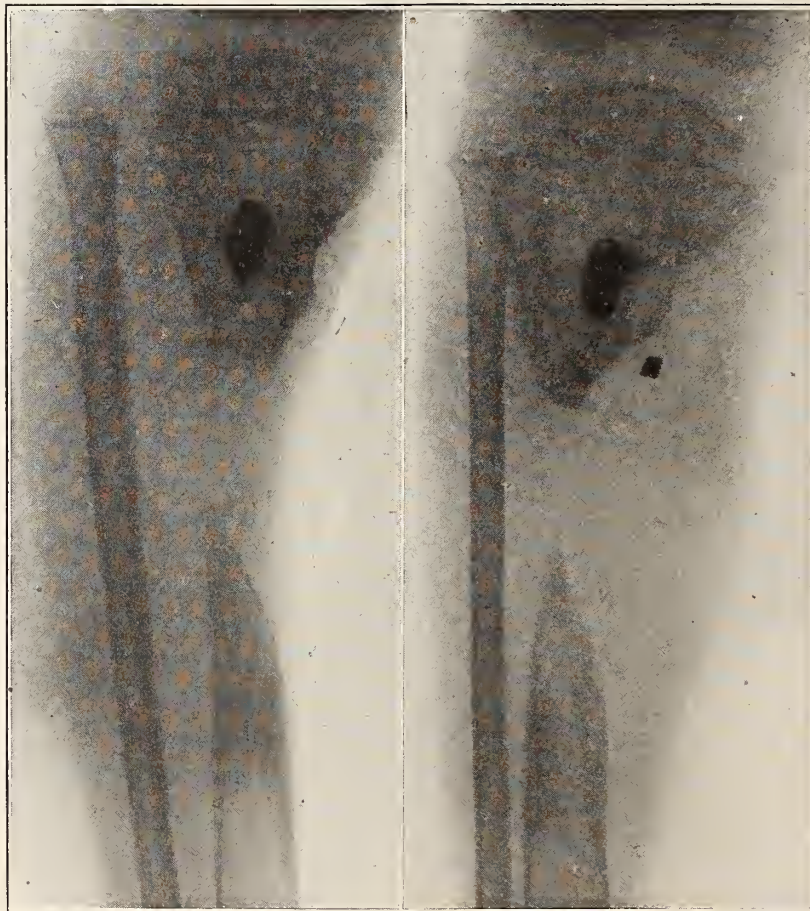
HORACE G. WETHERILL, M.D., DENVER.

It is only within the last six years that the transplantation of bone for the reconstruction of defects, deficiencies and ununited fractures has been done on a foundation of accepted fixed principles. Whatever success attended previous attempts at bone

grafting was purely accidental and based on empirical observation rather than scientific study and animal experimentation. It is in the main to the early experimental work and splendid pioneer surgery of Sir William Macewen of Glasgow that we are indebted for the firm and fixed scientific foundation upon which this type of bone surgery is now done.

It was Macewen who exploded the universally taught and accepted theory that the periosteum is osteogenetic, and chiefly re-

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.



Dr. Wetherill's case, July 1, 1912. Remaining Mosetig-Moorhof filling small and in center of the head of the tibia. The ends of the fragments smooth and pointed. The black square is the shadow of a small piece of metal. It indicates the opening of a sinus leading down to the filling.

sponsible for the regeneration of bones; and it was he who taught us also what its true function as a limiting membrane is. From Macewen we learned how to make successful bone grafts, and why they succeeded; and it is upon the foundations he established that the evolution of the science and art of bone grafting has been built up to the successful practice of today.

In the study and discussion of this topic which followed the publication of Macewen's book*, two points of great academic interest were often in controversy, though the practical bearing of neither of them was thought to be very important. The first was the exact function of a bone graft and the mod-

us operandi of its regeneration of bony structures, i. e., whether it was osteogenetic or merely osteoconductive, etc.; and the second, its fate or what becomes of it in the process of reconstruction of the new bone in its entirety. These two very interesting questions never have been settled as fully and satisfactorily as the advanced art of bone grafting would justify and appear to demand. One may arrive at some kind of basis from which to make deductions through the study of an analogous process, all stages of which may be closely observed from day to day. Skin grafting, particularly if done by the "full thickness" method, may teach us much of the life history and ultimate fate of transplanted autogenous tissue even though the growth of the latter is "on

*The Growth of Bone, By William Macewen, F.R.S., Glasgow. James Maclehose and Sons. 1912.



Dr. Wetherill's case, Oct. 25, 1912. Front and lateral views, showing graft from opposite tibia nailed in position to bridge the gap. The graft was driven into an excavation in the medullary canal of the upper fragment and spliced to the lower fragment, as shown in skiagram to the right. Silver-plated wire brads $\frac{5}{8}$ inch long were used. The graft was $3\frac{1}{2}$ inches long, $\frac{5}{8}$ inch broad and about $\frac{3}{8}$ inch thick, and was taken without periosteum.

the flat" while bone grafts grow "circumferentially", and the new growth of bone is, under favorable circumstances, somewhat in proportion to the number of fragments implanted.

The observation of bone grafts and fragments of comminuted fractures with the aid of x-ray plates and the fluoroscopic screen also assists in this study.

That the transplanted bony fragment provides the osteoblasts from which the new bone is reconstructed is now accepted as an established fact. It is also known that the transplant may be made without periosteum without endangering its life and growth, though it is now generally believed by most surgeons that the best surgical results are attained when the transplant contains a portion of all the elements of the bone from the periosteum to and including the bone marrow, also that new growth is prompted by contacting the graft in its matrix so that like tissues are brought together. When bone grafts are so placed the regeneration of the shafts of long bones takes place with astonishing rapidity, as is exemplified in the case I shall report in connection with this paper. The bony elements from the transplanted fragment, if it be carefully contacted with like elements in the matrix so that a good blood supply to the graft is assured, undergo a surprisingly rapid and vigorous proliferation, but proper contact with like elements is almost essential to success. Not only will new bone fail to grow, but the graft will be absorbed rapidly, no matter how good its blood supply may be, if it has no bone to grow upon and from. It was possible to demonstrate in the case I am about to report that growth from a side splice or inlay in which like elements of bone and graft are brought together is much more certain than if the graft is driven into the marrow cavity as was at first done by some surgeons. The fruit grower in placing the scion in the tree observes this principle with greatest care. He contacts bark to bark, and wood to wood; and there is good reason for the adoption of a like principle in bone grafting.

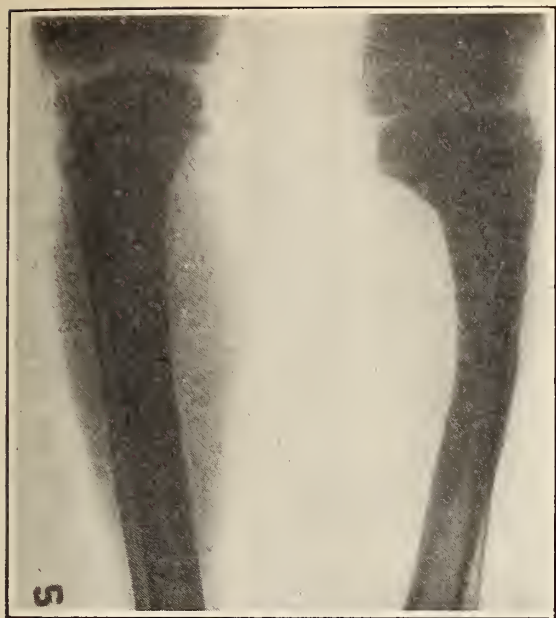
The ultimate fate of the bone graft is

doubtless determined by the absorbents in due time, but there is no reason for believing that it becomes necrotic or dies, or that it is disposed of in any way differently from other living bony tissues. That it acquires a circulation of its own, that it lives and grows and proliferates, that it becomes a part of, and is incorporated with the bone into which it is grafted, is certain. In examining x-ray plates of grafted bones taken from week to week, the merging of the graft into the shaft is seen to be steadily progressive. The graft apparently loses its density and consistency as the new bone cells grow about it, and it is ultimately lost or merged into the new growth which becomes a homogeneous whole in which the cells of the graft, of the shaft and of the new bone all form a part.

To illustrate the function and fate of a bone graft, I desire to present a patient op-



Dr. Wetherill's case, Oct. 25, 1912. The shaft of the right tibia, showing site from which the graft had been removed. At the time this picture was made, four weeks after operation, no defect in the bone could be felt.



Stereoscopic x-ray photograph of both legs, July 1st, 1916. Wire nail in position.

erated upon September 28, 1912, just five years ago this very week, and to show you the roentgenograms taken at intervals since that time. The first of these were made by Dr. Childs of Denver and the last by Dr. Louis G. Brown of Colorado Springs. Dr. Brown's roentgenograms were made September 17, 1917.

Those who are interested in this matter may find the original report of this case in the *Journal of the A.M.A.*, March 29, 1913, Vol. LX., pp. 983-990.

This is one of the earliest, if not the first successful bone graft made en bloc in Colorado, and is of interest in that the transplanted graft was taken without periosteum. The case was also instrumental in establishing the fact that infection in a wound does not necessarily destroy the life and growth of the graft, and that the contact of like elements of the bone, as in the side splice, or inlay, gives greater assurance of success than does the plan of driving the graft into the medullary canal.

Quoting from this former paper, permit me to reiterate that "of the two methods of making the contact, I believe that the oblique splice is preferable when the ends of the bone are conical or otherwise adapted to this method".

As an illustration of the great rapidity of the growth of bone from such a graft, permit me to quote again: "After eight weeks

the tibia was firm, fairly uniform throughout, and larger in circumference over the graft than the right tibia, though no defect could be detected by palpation at the site from which the graft had been removed from the right leg".

Experimental dog surgery and the subsequent clinical experience of surgeons have evolved a standardized practice of bone surgery for today that is based upon sound scientific principles. Among other important facts now established is the necessity for conservation in the treatment of comminuted fractures even if compound and complicated by badly lacerated and infected soft parts. Though many small and apparently detached fragments of bone lie loose in the bruised tissues, they may be useful as fragmentary bone grafts for the restoration of the part, and should not be removed until it is evident that they are dead and lie as foreign bodies in the wound. Under proper conservative treatment, many such compound comminuted fractures may heal favorably. Such fragmentary autogenous grafts often live and serve to regenerate a member that might otherwise be lost.

936 Metropolitan Building.

DISCUSSION.

F. H. McNaught, Denver: Dr. Wetherill always presents an interesting paper and gives us an interesting discussion, but today, during the period of the world war, when more bone surgery is being done than ever before, it seems to me

that this paper is particularly adapted to this occasion.

He has given us a very full discussion of the function and fate of a bone graft. The function seems to resolve itself into the osteogenetic power of the graft. It might have another function, that of a mechanical one. In spinal surgery, in tuberculosis of the spinal bodies, the principle of treatment is immobilization. Probably we have no better splint today than the bone graft as applied to the spinal processes to bring about immobilization. It becomes incorporated in the spine, holds it very steady and does not have to be removed. To also fill this mechanical function, the bone graft is used early in fracture cases. In many of the fracture cases it would be unnecessary to use a graft for its functioning qualities if the ends of the bone were kept quiet and in proper apposition. The bone graft in these cases in my opinion acts mechanically; it holds the bones in apposition while the osteogenetic function goes on from the ends of the bones.

The fate of the graft is much more interesting. It often depends upon surgical technic. The fate of the graft also depends upon the source from which it is obtained and the time of its implantation. It is a well recognized fact, even in the autoplasmic transplant, that bone should not be removed from one bone of a syphilitic subject and placed in another situation. You all recognize that transplants should not be obtained from infected bone. From bone that has a large amount of cicatricial tissue, transplants should not be taken, as the vitality of these transplants is very much diminished, and the fate of the bone is usually anticipated; death takes place. Fortunately the surgeon today is not using antiseptics as he was a few years ago. Unfortunately iodine is being used if any antiseptic is employed. A few years ago bone tissue was thought to be indifferent, sluggish, while today it is recognized as one of the most sensitive tissues we have in the body. The demonstrations made by Davison and Smith have shown that the bone graft does not tolerate any form of antiseptic, however dilute the solution may be. Iodine solutions are possibly more frequently employed than any other antiseptic solution. It has been proven that even iodine in the catgut as placed in a wound for the ligation of vessels has a detrimental effect upon the bone graft and often produces death. Gloves that have been prepared in weak solutions of iodine are not to be used in handling bone grafts. It has been shown that iodine in the most minute solution penetrates the surfaces of these grafts, destroys the osteoblasts, causes the functioning process of the bone to be destroyed, and that death of the bone takes place. So you see that the technic, the method by which the bone graft is obtained, the method by which it is transmitted from the bed of the donor to the bed of the host, is very essential to success in bone grafting. Thorough asepsis should be used. No antiseptic solutions of any kind are to be used in bone grafting.

L. H. McKinnie, Colorado Springs: Dr. Wetherill's paper is entitled to a great deal more time for discussion than I can give it, but I will take up and continue what Dr. McNaught was saying with reference to the importance of the technic. The principles of the bone graft and bone surgery have apparently been pretty well settled. They are as well standardized as anything today is being standardized. The importance of periosteum has been fixed; the importance of the marrow has been fixed, and the technic is one of

the great essential phases. Today we are doing nearly all of the bone graft work with electrical instruments that are driven at a tremendous speed, and consequently great care has to be taken not to overheat the transplant as we remove it from the donor. I think this must be carefully watched, and when this instrument is used, especially the Albee, which goes at a terrific rate, some cooling solution must be used. No antiseptic can be used with any degree of safety. I had one case recently in which the transplant had to be driven like a plug into the bone. Dr. Wetherill brings out in his paper, that this is not so successful as the lateral sized graft. This case was one of ununited fracture of many months standing in which foreign materials were driven in, making it a compound fracture. After many months it had failed to unite. I took a graft from the tibia, and at that time, as I could not get the inlay graft successfully, I reamed out the two ends of the bone. The x-ray plate showed that we got a perfect result so far as the cure of the ununited fracture is concerned, but the plate also showed that the graft was gradually being absorbed. I think the function of this particular graft was entirely mechanical. Holding the two ends together, after being freshened, it allowed the bone to begin to work and regenerate to get a good result, but I do not think I got any osteogenetic function from my graft. A perfect graft in the x-ray picture shows very similar to the healing of a fracture, namely, the ends of the bone are seen thinning out as they do in a fracture. The osteoblasts are thrown out into the cavity and into the spaces and gradually form bone.

I. B. Perkins, Denver: I wish to compliment Dr. Wetherill on the result he has achieved in this case. I saw this boy in my service at the Children's Hospital in Denver with a large abscess of the leg, and I opened the abscess. Then I saw very little of the boy after that until the time of the bone grafting. So far as I know, this is the first bone graft and transplantation that has occurred in Colorado, and Dr. Wetherill deserves great credit for the undertaking considering the field in which he had to work. It was very unsatisfactory and discouraging, and when he afterwards showed me the graft in process of union we could see that it was taking hold and was growing. I did not dream that he would attain any result that would amount to anything. I am very much gratified and surprised to see the result he has obtained, and it shows that we must not throw aside a case as being beyond having anything done for it. The distance bridged by the graft is considerable. I have one case where the graft was seven inches long. The graft taken out of the sound tibia was seven inches in length, and the space where the graft stood between the fragments of the fractured tibia after it was completed, was over four inches. I did what others have done before driving the fragment in, reamed it. About four months afterwards there was a cone-shaped portion through which the bone opened at either end, leaving a space in the middle, but the graft appeared to be thicker. It seemed to have cast off and strengthened itself. A year later there seemed to have been a shell thrown out all the way around, following down over this cone-shaped portion and filling in on the sides. I have not seen the graft in this case for some time, but I expect to see that space filled out completely.

As to bone grafts for supporting the spine, it is a method of strengthening the spine, it immobilizes it, and the results are very successful.

I had a case where I transplanted a ten-inch graft and got good union except at the lower end, and still there was enough there to make it firm.

Frost C. Buchtel, Denver: Much more credit should be given to a man for obtaining such a result as Dr. Wetherill has in this case in bone grafting five or six years ago than now, not only on account of the improved technic of today, but on account of the instruments we have now for this work.

Dr. McNaught mentioned the Albee bone saw. There is no comparison at all between the Albee instrument and the Hogland bone saw. One does not have to use salt solution to keep the latter instrument and bone cool because it does not run so rapidly. The saw, instead of coming next to the motor, so that it is difficult to get into the thigh, comes at the end of the shaft, and the motor can be placed in such a position that the shaft can be brought around with the saw running in the same axis as the shaft, so that the twin saws can be put down and held tight and the graft be taken more easily than with the Albee instrument. The Hogland instrument is not very well known. One has to go to Chicago and have it demonstrated to him. You cannot buy one from the instrument makers without this demonstration. They will not sell it to you. It is an instrument that should be better known than it is.

Dr. Wetherill (closing): When this operation was done we did not know as much about bone graft surgery as we do today. This graft was painfully and slowly taken out with chisel and mallet, the only instruments available at that time. The thing that impresses me now is the tremendous rapidity of the evolution of bone graft work from that period, five years ago, to the present time, when bone grafting is upon a scientific basis and is mechanically perfected.

ECLAMPSIA.*

P. A. MURPHY, M.D., DENVER.

One of the most intensely interesting subjects in modern obstetrics which by reason of the present and most generally accepted theory bids fair to focus the minds of medical men is the toxemia of pregnancy. The wide difference of opinion concerning the etiology, pathology, symptoms and treatment of this malady, as expressed in the writings of workers in this particular field, is indeed very great, and one would imagine that many years might elapse before a generally accepted and sound theory would be finally developed.

I shall endeavor to confine myself to the theories connected with the course of the pre-eclamptic and convulsive or comatose toxemia of pregnancy. However, in order to be comprehensive, one must digress somewhat and speak of the various phases

of pregnancy toxemia which lead up in a distinct number of cases to the eclamptic state. This seems necessary because of the close relation existing between these various phenomena. From the time of Hippocrates the causative factor or factors in the etiology of eclampsia have occupied the attention of students and at present, as a result of their investigation, many and varied theories have been evolved. For general purposes, one may mention the various conditions which lead up to hepatic insufficiency, namely pregnancy itself, the influence of heredity, previous toxemias, influences which tend to disturb the nervous system, the menstrual period and mechanical factors which perhaps exert in no small way a potent influence in the subsequent development of the pre-eclamptic or eclamptic state. Convulsive toxemia or eclampsia may be spoken of as a fulminating type of autotoxemia of the pregnant state, usually making its appearance during the latter months of pregnancy. This disease is characterized chiefly by a chain of symptoms varying with the degree of autotoxemia. This grave malady according to the best observers occurs once in every four hundred pregnancies and may be said, for the purposes of discussion, to possess the following pathology: the changes in the kidney in the latter months of pregnancy are the result of the attack made upon the renal organs by the autotoxic state, and the so-called kidney of pregnancy, which in the main is nothing but a temporary fatty degeneration of the parenchyma of that organ, is developed. Depending on the degree of toxemia, we may have changes in the kidney similar to those conditions produced in the liver in acute yellow atrophy and acute parenchymatous hepatitis. Ewing claims that in the majority of cases of eclampsia with the presence of the so-called kidney of pregnancy, various hepatic lesions may be found microscopically. Post mortem findings in the liver of cases of convulsive toxemia demonstrate marked changes in the cells of the parenchyma, that is, that the cells are considerably enlarged and various degrees of disintegration of the cytoplasm is evident. In advanced cases only the outline of

*Read before the Fort Collins Medical Society, March 6, 1918.

the cell may remain, the cell contents having entirely disappeared. We may also find hemorrhagic foci beneath the capsule and areas of focal necrosis. Thrombosis of the portal veins may be associated with marked hemorrhage and necrosis of the parenchyma in fatal cases. Some observers have noted similar changes in the liver of the new-born.

The symptoms of eclampsia are those of the preeclamptic stage and those occurring during the actual eclamptic attack. If there is a history of hyperemesis occurring at various intervals during pregnancy, the presence of albumin and casts in the urine and a continuous rise in blood pressure during the latter months of pregnancy, one must surely be on his guard, for these danger signals are enough to awaken the average medical man to the true situation. The above symptoms are frequently associated with attacks of headache, dizziness, tendency to nervous excitability, disturbances of the special senses (spots before the eyes, dimness of vision or double vision, and photophobia). Gradually as gestation progresses, these symptoms become more marked in character until finally the actual eclamptic state makes its appearance.

The symptoms of the convulsive state may be summarized as a series of convulsive seizures in which nearly all voluntary and, frequently, involuntary muscles are involved. There is loss of consciousness and sensory faculties. These symptoms, however, are undoubtedly familiar to all medical men and need not be elaborated upon for the purposes of this paper.

Obviously, the rational or specific treatment of any disease depends solely on a knowledge of its true etiology, and since the cause of this malady is yet undiscovered, necessarily its treatment is empiric. However, it may be well to outline briefly some of the measures adopted by the foremost obstetricians of the day in the management of this disease. Prophylaxis or preventive treatment of the pre-eclamptic state may in many instances ward off the actual eclamptic seizure and save many a life which might otherwise be doomed. The presence of albumin in the urine, steady increase in the blood pressure in the terminal months

of pregnancy, with diminished quantities of urine and a diminution in the total solid output, are suggestive of serious trouble and measures should be adopted for the speedy relief or amelioration of these symptoms. A special diet, consisting of the smallest amount of nitrogenous food sufficient to sustain life, is ordered. Stimulation of the eliminatory apparatus and absolute physiological and body rest are very necessary procedures and capable in many cases of aborting a fulminative comatose toxemia.

Perhaps nowhere in medicine, and particularly in obstetrics, do we find ourselves on more debatable ground than in the effort to harmonize the various theories so far advanced in the treatment of eclampsia. The literature on this subject fairly teems with opinions and results obtained by the followers of the radical and progressive groups, and it might be well to lay before you some of the methods employed by each particular school. The lowest mortality ever reported was obtained by Veit as early as 1667 as a result of the administration of large doses of morphine, as much as three one-hundredths of a gram being given every forty-five minutes until complete narcotization had ensued. Veit combined the drug treatment with the usual eliminatory methods. Stroganoff, a Russian investigator, in 1900 reported a series of one hundred and twenty-six cases of eclampsia with a maternal mortality of only six per cent, and fetal mortality of only thirteen and one-half per cent. The method of Stroganoff is to administer alternate doses of morphine and chloral hydrate over a period of twenty-one hours, never resorting to operative interference unless the toxemia is exceedingly severe, seriously threatening the life of the mother. Lichtenstein combines the Stroganoff method with active bleeding. Both of these investigators advocate free elimination by skin, kidneys and bowels and administration of large amounts of fluid. It is interesting to note in this connection the changed attitude of McPherson, of the Lying-In Hospital of the City of New York. In a paper which he read before the Obstetrical Section of the American Medical Association in 1909, he advocated as the only feasible treat-

ment of eclampsia immediate operative procedure and evacuation of the uterus followed by elimination in the puerperium. This treatment resulted in a mortality rate of twenty-three per cent in the mother and forty-four per cent in the fetus, covering a series of two hundred and fifty cases. In 1915 he decided to try the so-called Rotunda conservative treatment with the result that he obtained a maternal mortality rate of eight and six-tenths per cent in the mother and forty per cent in the fetus. The methods employed in carrying out the Rotunda treatment may be mentioned briefly as follows: On admission to the hospital the patient is catheterized, blood pressure taken, and she is placed in a quiet room; hypodermic injections of one-half grain of morphine sulphate are started and continued every hour until respiration drops to eight per minute. Gastric lavage is instituted and two ounces of castor oil is given by the tube at the end of the lavage. This is followed by a colonic flushing with five gallons of two per cent glucose solution. Phlebotomy is never attempted unless blood pressure is above one hundred and seventy-five. In the experience of McPherson, convulsions usually ceased and the patient passed into labor in ten or twelve hours time. These results were obtained by him in a series of one hundred and thirty-five cases.

The experience of Kosmak, also an attending obstetrician at the New York Lying-In Hospital, corroborates the present opinion held by McPherson in the sense that operative procedure is never attempted by him without applying conservative measures first. He has been able, by this procedure, to greatly reduce both maternal and fetal mortality. His results were obtained in a series of over fifty cases, and in a recent paper of his he is inclined to condemn too hasty operative procedure, as many times this is attended by great shock and mutilation of the mother, only to bring into the world in most cases a thoroughly poisoned child which has, at best, but few hours to live.

The radical measures used in the treatment of eclampsia are operative procedures usually designed to suit the condition of the

patient and more frequently to suit the operator in so far as his ability and dexterity may enable him to perform a certain operation. The abdominal Caesarean section is frequently employed by some of the foremost obstetricians today. Vaginal Caesarean section, an operation not frequently employed, but possessing advantages, is an operation of choice in certain selected cases. The use of bags to dilate the cervix, and this coupled with manual dilatation, to be followed subsequently by forceps, is also employed in a number of cases.

In conclusion, I might say that it is very obvious, in view of the uncertain etiology of this disease, that the various theories in relation to its treatment are hardly satisfactory in every case. It is certain that both forms of treatment, both radical and conservative, possess many good points and one should be guided solely by the needs in the individual case; in other words, the symptoms presenting should be treated and not the disease as a whole. I should say from my own personal experience, covering a period of twelve years in obstetrics, that nowhere in medicine is the judgment of the medical man more seriously at stake; and if he is fortified with knowledge pertaining to both the radical and conservative lines of treatment, he cannot fail to give to each and every patient satisfactory care.

936 Metropolitan Building.

CONGENITAL STENOSIS OF THE ESOPHAGUS: REPORT OF A CASE.

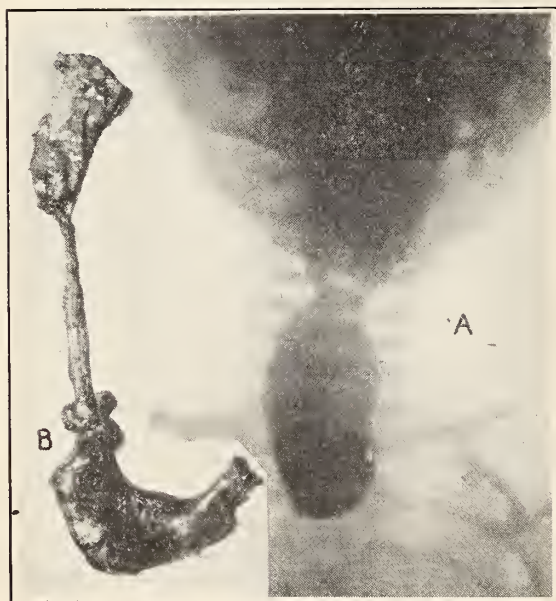
C. T. KNUCKEY, M.D., LAMAR.

The accompanying pictures illustrate a recent case of congenital stenosis of the esophagus. When the baby was born there seemed to be an undue amount of mucus in the mouth and nose. He took water and the breast well in amounts of one to two drams, but in a minute or two would regurgitate what he had swallowed, together with much mucus. On this account an attempt at lavage was made on the third day, but the catheter met an obstruction posterior to the

manubrium, and a diagnosis of stenosis of the esophagus was made.

On the morning of the tenth day consent was obtained for an x-ray examination, and barium sulphate in acacia was given and exposures made.

The child died the evening of the tenth day and esophagus and stomach were removed and are now in the pathological museum of the University of Colorado Medical School. Below the dilated portion the esophagus was represented by a solid cord for about three-fourths of an inch, gradually opening out into normal diameter. Nothing else pathological was found. Later it was learned that the mother had contracted syphilis about four years previously. Many thanks are due Dr. N. M. Burnett for the excellent x-ray plates which were secured. The dilated part of the esophagus is well outlined posterior to the manubrium. There is no trace of any opening of the esophagus below this. The photograph of the stomach and esophagus does not show the condition quite so well, yet the dilated part changing quite abruptly to the constricted part is easily seen.



A—Anteroposterior roentgenograph showing abrupt cessation of barium shadow at beginning of stricture. B—Photograph of pathological specimen, showing esophagus, dilated above stricture. The stomach is included below.

News Notes

The Federal Trade Commission has adopted official names for certain licensed drugs commonly sold under proprietary names. Those so far adopted are: Arsphenamine for salvarsan, diarsenol, arsenobenzol, etc.; Neoarsphenamine for neosalvarsan, neodiarsenol, novarsenobenzol, etc.; Barbitol for veronal; Barbitol-Sodium for medinal and veronal-sodium; Procaine for novocaine; Procaine nitrate for novocaine nitrate.

In certain quarters the attitude has been taken that the local anesthetic, procaine, is not identical with novocaine. The Subcommittee on Synthetic Drugs of the National Research Council corrects this false notion by explaining that procaine is now manufactured in this country according to a formula identical with the German formula patented in the United States, several firms being licensed under the Trading with the Enemy Act to make and market the drug, it being required of them that the new "Procaine" shall in every way be the same as the article "Novocaine" formerly obtained from Germany.

Announcement has been received of the marriage, June eleventh, at Denver, of Miss Ursie Bollinger to Dr. Claude Lorraine La Rue of Boulder.

Dr. J. H. Daniel, after several months' postgraduate work in the east and south, has resumed practice in Sterling.

Dr. F. E. Palmer of Kansas City, Mo., has entered into a partnership with Dr. M. L. Babcock at Sterling.

Dr. P. A. Wade of Cañon City was a Denver visitor for several days in the latter part of June.

Dr. G. C. Cary, formerly of Boulder, has recently located in Grand Junction and will limit his practice to ophthalmology.

Summer schools for doctors and nurses are being conducted by the state university as a part of the university's war activities.

Dr. W. W. Grant, Major M. R. C., now in active military service at Fort Logan, would like to rent his office for the duration of the war to a physician or surgeon on satisfactory terms. Inquiry should be addressed to 325 Mack Building, Denver.

The War.

Dr. Ben Beshoar of Trinidad has received a lieutenantancy in the M.R.C. with orders to report immediately for duty.

Captain A. G. Taylor stopped for a short visit at his home in Grand Junction while en route to San Francisco, where he will be located for an indefinite period.

Drs. C. H. Wilkinson and W. T. Little, of Cañon City, received commissions as captains in the M.R.C. on the same day in June.

Dr. F. F. Sharon of Denver, who has been serving as a postoffice inspector of medical frauds, has joined the M.R.C. with the rank of lieutenant.

Dr. M. J. Keeney of Pueblo has been made a captain in the M.R.C.

Dr. James G. Espey of Trinidad has been notified of his appointment in the M.R.C. with the rank of captain.

Dr. T. C. Taylor of Fort Collins has been given a captaincy in the M.R.C.

Dr. Robert Levy of Denver, who recently was ordered to Camp Lewis as a captain in the M.R.C., has been given a major's commission.

Dr. C. G. McEachern of Denver has been accepted in the M.R.C. with the rank of captain.

Dr. R. A. Paine of Denver has been ordered to

service in the M.R.C. He will go first to the Rockefeller Institute for a special course and afterwards to Washington for three months in the army medical school.

Dr. C. D. McKenzie of Denver has received a captaincy in the M.R.C.

Dr. Gerald Griffin of Denver has been accepted in the M.R.C. with the rank of captain. He will go to a base hospital at Camp Cody.

Dr. Philip Hillkowitz of Denver has been given a captaincy in the M.R.C. and is awaiting call to service.

Dr. Edward W. Collins of Denver has been given a captaincy in the M.R.C. and expects to leave Denver in September.

Dr. A. J. Campbell of Denver, now in France, has been made a major.

Dr. Albert J. Argall of Denver, appointed an assistant surgeon in the U. S. Navy in June, 1917, recently spent a few days in Denver with his father.

Dr. L. H. Wade of Denver has received a commission as lieutenant in the M.R.C.

Dr. H. W. Wilcox of Denver has received a captaincy in the M.R.C.

Lieut. N. H. Knoch of Denver was ordered to report at Camp Cody July 10.

Dr. Fred H. Carpenter of Denver, now at Camp Custer in the M. R. C. service, has been promoted to the rank of captain.

Dr. J. A. Dunwoody of Cripple Creek has been given a captaincy in the M. R. C.

Dr. C. Gillaspie of Boulder has accepted a commission as captain in the M. R. C.

Lieutenant W. V. Watson of Plateau City was ordered to report for service on July 5.

Dr. J. M. Braden of Lafayette has been accepted for service in the M. R. C. with the rank of captain.

Dr. Cuthbert Powell of Denver, in writing to give his address as Major Cuthbert Powell, M. R. C., Base Hospital Number Twenty-nine, American Expeditionary Forces, says further: "We are on the way. Everybody well and happy and fairly good-natured. We have had an opportunity to size up a number of medical units. I wouldn't trade places in Number Twenty-nine with any of them."

Dr. E. D. Downing of Woodmen has been accepted in the M. R. C.

Major Crum Epler, M. R. C., writes from the base hospital at Camp Custer, Battle Creek, Mich., that he is very busy. An 1100-bed hospital is used as a hospital training school, there being always one Red Cross unit at the hospital.

New and Non-Official Remedies. During June the following articles were accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Non-Official Remedies: Cutter Laboratory: Antipneumococcic Serum, Type I; Mead Johnson & Co.: Mead's Dextri-Maltose, No. 2, Mead's Dextri-Maltose, No. 3; H. K. Mulford Co.: Antipneumococcic Serum, Type I, Antipneumococcic Serum, Polyvalent.

Medical Societies

CITY AND COUNTY OF DENVER.

A regular meeting of the **Medical Society of the City and County of Denver** was held May 21, 1918, with President Moleen in the chair.

A communication from the Aetna Life Insurance Company regarding the group form insurance policy covering physicians' and surgeons' liability was read. It was referred to the board of trustees.

Dr. S. Duboff reported a case of Addison's disease and exhibited a specimen. The case was discussed by Drs. G. M. Blickensderfer, T. L. Howard and G. A. Moleen.

Dr. W. W. Grant, acting for Lieut. A. E. Hart, reported a case of lithopedium which had remained in the abdomen for many years and given very indefinite symptoms, if any at all. A roentgenogram was shown by projection which gave a clear image of the fetal skeleton.

Dr. Saling Simon reported a case of leukemia and exhibited the patient. His case was discussed by Drs. F. C. Buchtel, C. M. Blickensderfer and Captain Louis Nahum.

The subject of cardiovascular conditions in the army was then presented by Captain Louis Nahum in a very commendable paper. Discussion of the paper was given by Drs. W. N. Beggs and P. J. Pothuisje.

R. G. SMITH, Secretary.

Book Reviews

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Eighth edition, revised and reset. Octavo of 863 pages, with 715 illustrations, 38 of them in colors. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$5.00 net.

This is an ideal text-book for the student; it also serves as an advanced treatise for the obstetrician and for general practitioners. It represents the very latest teaching in the practice of obstetrics by a man who has had a wealth of experience in eight of the principal hospitals of Philadelphia. Hirst is not only a well recognized authority but he is one of our greatest teachers. His whole professional career has been devoted to teaching medical students in clinics, hospitals, laboratories and the lecture room. The work emphasizes especially the practical side of the subject. It contains a great number of new and original illustrations which in themselves complete an atlas of obstetrical practice.

The author's style is clear, and the book can be unreservedly recommended. The arrangement of the subject matter is beyond criticism. Part one deals in the physiology, diagnosis, and management of pregnancy; part two, the physiology and management of labor and the puerperium; part three, the mechanism of labor; part four, the pathology of pregnancy, labor and the puerperium; part five, obstetric operations; and part six, the new-born infant. Among the more important additions are new methods of anesthesia, new technic for cesarean section and new operations for the repair of injuries to the birth canal due to labor. The Abderhalden pregnancy reaction and "twilight sleep" are conspicuously absent

from the book, the latter being merely mentioned under anesthesia. The text is very instructive and interesting.

H. C. L.

A Clinical Manual of Mental Diseases: by Francis X. Dercum, A.M., M.D., Ph.D.; Professor of Nervous and Mental Diseases, Jefferson Medical College; Consulting Neurologist to the Philadelphia General Hospital; ex-President of the American Neurological Association, etc., etc. Second Edition, Revised. W. B. Saunders Company: Philadelphia and London, 1917. Price, \$3.50.

This is a revised and slightly enlarged edition of Dercum's well known book. It is based on his course of lectures at Jefferson Medical College. It is broad in its scope, covering in addition to the ordinary insanities the mental disturbances dependent upon somatic affections, and the milder psychoses, the borderline conditions, etc. There are also interesting chapters on the psychologic interpretation of symptoms and on treatment.

The book is written primarily for medical students and practising physicians. Dercum states in the preface that the presentation of his subject is clinical and practical. If he had been less modest, he might have said that it is also broadly biological and philosophic.

In his clinical presentation the author gives graphic descriptions of the different types of mental disease, and his vivid pen pictures are a feature of the book. The development and course of each disease are well considered, and the prognosis is fully discussed. Treatment is not presented at great length, but therein the book is practical, for the general practitioner seldom undertakes to treat insanity.

As a text book for the student and physician the book is deficient in references to collateral literature. Numerous authors and investigators are cited, but there are only two footnotes giving specific references to other works.

The index is well prepared, and thus the book is accessible as a reference work. C. S. B.

The Medical Clinics of North America. Volume 1, Number 5. Chicago Number, March, 1918. Octavo of 241 pages, 35 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Published Bi-Monthly. Price per year: Paper, \$10.00; Cloth, \$14.00.

This number presents clinics from the Mercy, Wesley Memorial, Cook County, St. Luke's, Michael Reese, and Children's Memorial Hospitals; the Northwestern Medical School and the Chicago Polyclinic. Among its contributors are eleven internists, three pediatricians, a neurologist and a roentgenologist. Some of these articles consist of true bedside clinics such as are daily given to medical students. Others are more formal presentations of cases, with references to the literature, and still others are not clinics at all but contributions of a more general nature without any reference to individual patients.

In the opening chapter Dr. Charles Louis Mix analyzes the rheumatic heart, the syphilitic heart, the renal heart and the arteriosclerotic heart. Dr. Solomon Strouse presents a rather remarkable instance of diabetes occurring in twins; he then discusses the Carrel treatment of edema, and the importance of details in the treatment of angina pectoris. Dr. Charles A. Elliot gives some remarkable results of radium treatment in leukemia. The contributions of Dr. Joseph C. Friedman on Reflex Epigastric Disturbance and Epigastric Pain, of Dr. Julius H. Hess on Tuberculin Skin Reactions in Diagnosis in Tuberculosis in Chil-

dren and of Dr. Isaac A. Abt on Asthma in Children deserve special commendation. J. L. M.

Infant Feeding. By Clifford G. Grulec, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College; Attending Pediatrician to Presbyterian Hospital, Chicago. Third Edition Thoroughly Revised. Octavo of 326 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$3.25 net.

In this work the author has given us briefly but clearly the substance of the present-day knowledge of infant feeding in health and sickness. He has quoted extensively from other authors, showing a thorough familiarity with the current literature on this subject, and has presented the facts in an able manner. The illustrations are good and the text well written. The book should be of value to those interested in the subject.

G. M. B.

Syphilis and Public Health. By Edward B. Vedder, A.M., M.D., Lieutenant-Colonel, Medical Corps, United States Army. Published by permission of the Surgeon-General, United States Army. Lea & Febiger: Philadelphia and New York, 1918. Price, \$2.25.

This is a most valuable contribution to the subject, a modern review of the essentials in the prophylaxis, public control, hygiene and modern treatment of syphilis and other venereal diseases. No practitioner or medical student can well afford to be without this valuable, little, yet very comprehensive publication.

W. H. D.

Color Blindness Among U. S. Seamen.—The importance of differentiating between those who are dangerously color-blind—that is, unable at all times to distinguish between red and green—and those who are only slightly color-blind, is brought out in a recent study conducted by the U. S. Public Health Service and reported in Public Health Bulletin No. 92.

The following classes are regarded as dangerously color-blind and therefore to be excluded from positions in which they would be required to read colored signal lights: (1) those who are able to see but three or less colors in the spectrum (the normal person sees six or seven); (2) those who see more than three colors in the spectrum, but who have the red end so shortened as to prevent the recognition of a red light at a distance of two miles; and (3) those with a central scotoma (that is, a blind or partially blind area in the field of vision) for red and green.

It was concluded that this class of persons could be distinguished from those harmlessly color blind by the use of the Edridge-Green color lantern, which was found preferable to colored yarns. The theories on which the color lantern is based are given in detail in the publication.

Another feature of the investigation was the study of the prevalence of color blindness. Excluding those able to distinguish five colors in the spectrum, it was found that color blindness occurs in about 8.6 per cent of men and 2.2 per cent of women. Color blindness of a degree dangerous in occupations requiring the recognition of colored signal lights was found to occur in about 3.1 of men and 0.7 per cent of women. Among refractive conditions of the eye, color blindness occurs least frequently in eyes apparently without demonstrable refractive error; it occurs most frequently in eyes showing mixed astigmatism.

Colorado Medicine

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Editorial Comment

THE STATE SOCIETY MEETING.

A medical organization alive three days in the year, and inactive the rest of the time, would be of little value to its members. The Colorado State Medical Society, through its county societies and **Colorado Medicine**, has developed into a higher and more effective organization than that. Yet much of its effectiveness throughout the year must always depend upon its annual meeting.

It is not the number of the county societies, nor the length of the list of members, nor the number of papers in our journal, that measures the strength and effectiveness of our State Medical Society. It is rather the mutual understanding and good feeling of the members toward one another that give real vitality and effectiveness to such an organization; and these depend more on our seeing and hearing and knowing each other—our mingling together and joining in a common discussion—than on any printed words that can be brought to us.

At the annual meeting we get the impression of the personality of a fellow member, which becomes a factor in the appreciation of all that we subsequently read of what he writes or is reported to have said. Our recollections of such personal contacts become a most important source of interest in what is being done in the county medical societies throughout the state.

The conveying of truth from one to another is not so simple a process as merely for one to write it down and another to read it. It is generally more profitable to read

in the journal a paper one has already listened to in the Society meeting, than merely to read it from the printed page. And we always get more of suggestion, and can better estimate the value of what we get, when we read the paper of some one we know, than from the writings of those who are personally unknown to us.

It was not by accident that Edward Jenner discovered vaccination while working as a country doctor; or that Ephraim MacDowell from the frontiers of civilization gave the world ovariotomy and revealed the possibility of abdominal surgery. The mystery of such advances in medicine disappears when we learn that the one was a favorite pupil of John Hunter, of London, and that the other brought to the backwoods the inspiration of personal contact and acquaintance with the then unfulfilled dreams of John Bell, the great teacher of surgery in Edinburgh.

For the average physician who has got into active practice, the medical society is almost the only opportunity to come into personal contact with his colleagues, and to get the help and inspiration that it alone can bestow. In the county society the number we can so meet is quite limited, and they are all working on similar problems and under much the same conditions as ourselves. In the great national organizations one is more or less lost in the crowd and rush, and if he sees the great leaders of medicine it is at a distance; while the words spoken by them from the platform are carefully chosen and written out, as far removed as possible from their original spontaneous modes of thinking. It is as though one saw the final result of a great operation, rather than watched it step by step and

noted how the surgeon met each new issue as it arose.

In the State Medical Society we have the best chance to meet the whole profession, the famous hospital operator and the man who must meet emergencies in the cabin without assistants, nurses or even decent hygienic conditions. Hither come the famous teacher and the pupil just started on his own professional career. Here the different specialties are not fenced off into different sections. If section meetings are held they are for only part of the time, and all under one roof. They do not scatter the groups through a large city where contact between them is almost impossible.

Again, at these state meetings it is possible for the great bulk of those in attendance to stay at one hotel, and thus be in close communication with each other between the society sessions. This gives opportunity for the most numerous and often the most important discussions of the meeting. The formal program gives occasion for the gathering, and guarantees that there will be a sufficient number present to make informal groupings possible. But the really interesting and illuminating discussions are largely held when two or three or a half-dozen are sitting together, talking of a subject in which they are all actively interested.

It is through such discussions that the state society meeting is of the greatest benefit. They are more numerous than those provided for on the printed program; and more quickly get to the heart of the matter discussed. Everybody that has something to say has a chance to say it, and no one has to listen long to what he does not care to hear. Skepticism as to the value or success of a state society meeting is usually based wholly on the formal proceedings; and ignores the more important informal meetings that the formal program makes possible.

This year's meeting of the Colorado State Medical Society in Estes Park, on September 9, 10, and 11, will be rich in opportunities for the more valuable individual discussions. The formal program will not crowd them out. The surroundings which bring people back year after year from distant cities to

renew health and enjoyment of life are most favorable. And from our colleagues who are absent will come written messages giving their outlook on different phases of the great struggle for world peace and world civilization in which they are actively engaged. It is to be hoped that many will gather for this renewal of old friendships and forming of new ones, this opportunity to draw inspiration and help for our daily work. The opportunity to broaden one's outlook, increase professional efficiency, and at the same time get the benefits of recreation amid the most pleasant surroundings is one that should not be neglected. E. J.

MEDICAL CONSCRIPTION IN ENGLAND.

In most of the fundamental steps related to the necessities of the war, the various great powers involved have acted, sooner or later, along very similar lines. This statement has been true, and will probably continue to be true, as much with regard to the supply of medical service as in other matters.

In March, 1915, the then existing supply of medical men in the army having proved inadequate for the larger fighting force of Great Britain, the Director-General of the British Army Medical Service called for two thousand additional medical officers. A similar call by the Surgeon General of the United States for five thousand additional volunteers occurred some time ago.

Since March 1915, the British army, and also the civilian communities of the British Isles, have gone through the successive phases of more and more urgent need of medical men. Until recently voluntary organizations were relied upon for satisfying these needs; chief among such organizations being the Central Medical War Committee and the Scottish Medical Service Emergency Committee. But, just as the voluntary system of enlistment of soldiers was found to be inadequate in England, and was replaced by compulsory service, so the medical requirements of the British army have at last been made the subject of special legislation

which virtually amounts to vocational conscription.

The position of the English physicians under the new military service law may perhaps, in the words of Sir Donald MacAlister, president of the General Council of Medical Education and Registration, be regarded as a tribute to the general standard of healthy vigor of the profession; for, while the age limit for the general male population of Great Britain has been raised to fifty years, the limit for medical men has been set at fifty-five or, more exactly speaking, fifty-six years. "As we are held capable," says MacAlister, "of a unique form of service to the State, so we are charged with a heavier responsibility than others."

Under the provisions of the new English law, all medical men up to the age of fifty-six years are liable to military service, and nothing definitely stated in the Act renders it necessary that they shall be employed as physicians. Their exemption from military service is to be based upon the same grounds as affect ordinary military service, namely, personal hardship, occupation, ill health, or conscientious objection. In practice, however, the English Ministry of National Service has proposed to issue a certificate of protection to every medical man of the new military age in regard to whom an application has not been made on personal grounds. The exemption thus provided will be conditional on the practitioner undertaking such professional service and under such conditions as the Director-General of National Service may deem best in the national interests. In other words, the practitioner receiving a certificate of protection will be left to continue his present work unless and until he is called upon to service in some other way. If he decides not to accept this form of exemption, he may address to the special tribunal established for dealing with medical cases an application for exemption on personal grounds. Thus it will be within the power of the Director-General of National Service to place any physician whose exemption is merely of the ordinary occupational character wherever he may be needed, either with the army or with any

section of the civilian population which is in urgent need of medical attention.

The requirements of the armies of the United States as to medical care will be proportionally greater than those of the other great armies, since the American Army will be fighting thousands of miles from its own country, so that most of its hospitals will have to be in Europe. If the war is greatly prolonged, it is not at all improbable that in this as in other military measures the government of the United States will follow the lead of our European allies.

THE NURSING PROBLEM.

Nowhere is the problem of readjustment from peace to war or from war to peace more serious than with regard to medical and nursing attention. By modern standards neither a doctor or a nurse can be produced in anything like the brief space of time required to make a soldier. It is impracticable to lower those standards during the war, not merely because the army needs the best that it can get, but because the civil community cannot afford to expose itself to the risks that would ensue after the declaration of peace, by the flooding of the country with incompetent professional men and women, and incidentally because of the injustice to those already in the professions involved.

The nurses' training schools of this country are now reported to have a total enrollment of about forty thousand undergraduate pupils. The annual number of graduates based upon this number of pupils will not exceed eleven thousand. The number of these graduates who are likely to enter the army service is variously estimated at from one-fourth to one-third of the total. The need of the government is for an organization of fifty thousand women nurses, to take care of over four hundred thousand sick and wounded. So far only a little over nine thousand nurses have enrolled, in spite of the efforts during the first year of the Army and Navy, the American Red Cross, and various hospital committees and nursing organizations.

It was recently announced that an effort

would be made by the army to enroll not less than one thousand graduate nurses monthly. But, "in spite of the fact that only nine thousand have thus far entered the military establishment," says the Public Health Committee of the New York Academy of Medicine, "a shortage of nurses has already become apparent in the hospitals, particularly in the smaller ones, and in private practice. The American Nurses' Association has looked into the matter of the shortage, and reports that until several months ago most of the registries had available nurses but since then all of the nurses are busy all the time."

In view of the general demand for women to undertake the work previously done by men, there is no probability of a sufficient increase in candidates for the nursing profession being obtained from the ordinary sources, and even if the numbers required were so obtainable their training would not be completed in time to satisfy the needs of the army. To furnish a brief training to a large number of young women from among the usual class of applicants, and to put this special body of nurses into early service, would not merely be dangerous from the point of view of efficiency, but after the war would flood the country with inadequately trained nurses who would unquestionably compete with registered nurses trained according to normal standards.

Where is the government to obtain the large number of additional nurses which it requires and demands? There is one other possible source of supply which is not generally considered, but which must have occurred to a number of those who have given the subject careful consideration, and which is put forward by Goldwater, director of the Mount Sinai Hospital in New York, in a recent issue of the "Modern Hospital". There are in the United States very many women of comfortable or ample means who in ordinary conditions would not undertake nursing as an occupation. Many thousands of these women are seeking to find a channel for the exercise of their patriotic desire to work during the war by undertaking routine duties with the Red Cross or other agencies. Most of them are women of excel-

lent educational qualifications. Why not invite such women of this leisure class as feel that they can be spared to volunteer for special nursing duty with the army? The American Red Cross has already given to more than ten thousand women a part of a standard course of training for nursing aids or nurses' assistants, this course being intended to precede practical war work. The women of the leisure class are, says Goldwater, "the only labor reserves that the country possesses, and they can be brought into the nursing field without lessening the available supply of workers for any essential industry. They want to serve the nation, and they should be permitted to do so."

PUBLIC HEALTH EDUCATION OF THE PUBLIC.

Whether they view the subject from the narrower angle of self-interest and self-protection, or from the larger viewpoint of the public welfare, physicians should be active everywhere in the movement for the better education of the lay population in matters of health and especially in that department of the science of health which we include under public health.

In conformity with the modern tendency to aim at prevention as fundamentally more important than cure, it is evidently desirable that the knowledge of the average man and woman with regard to the scientific principles which govern his own health and that of his fellows should be widely increased. It is depressing to encounter such monumental ignorance of the elements of physiology and anatomy and of the communicability of disease as is revealed almost daily in otherwise intelligent adults who visit the doctor's office.

But where are we to begin in our campaign of education? The greatest factor in post-scholastic information of the public in the present day is the newspaper. But, even if the average newspaper were to open its columns liberally for this purpose, readers might be hard to find, especially in view of the incapacity of the average physician for the popular presentation of technical subjects.

"The great promise of public health work," says Wile (*American Journal of Public Health*, volume 8, page 336) "lies in the training of the younger generation in methods of healthful living." Again, "it is far easier to inculcate methods of healthful living and to awaken an interest in public health problems in the plastic minds of the young than it is to correct the vicious unhygienic habits of an adult population."

More than one-fifth of the population of the country, or approximately twenty-three millions, are in course of attendance at the public and private schools of the United States. In 1914 the public elementary schools of this country were attended by eighteen million children.

The systematic training of the child must, of course, in this as in other departments of study, be accomplished through the teacher. A greater insistence on the interweaving of health teaching with the other subjects of instruction would soon be followed by a teaching emphasis on health courses in the normal colleges. Some time ago there were 706,000 teachers in the United States, over 522,000 of whom were employed in public elementary schools. Wile suggests a more liberal use of the exteriors of school buildings for health publicity, by way of placards and announcements to the passing public. The bulletin boards might be made up by school children as a part of their training in manual work. The interiors of the schools might be made available for exhibitions in regard to special phases of public health such as infant mortality, housing, tuberculosis, and pure food. Lantern slides or motion picture exhibitions might be more freely resorted to both in the schools and elsewhere. The various health agencies should endeavor to work in much closer cooperation with the educational authorities. Wile especially emphasises the necessity of correlating the information which is to be conveyed with the regular course of study in other subjects as laid down by the educational authorities. It is to be feared that the ordinary text book which attempts to go into medical or allied topics is incomprehensible to nineteen children out of twenty to whom it is presented. "It is absolutely necessary that the health

material be interpreted by the various grade teachers in terms that are understandable by the different groups of children studying in normal graded classes of the schools."

Among the channels through which the child mind may be focused upon health topics are mentioned poster competitions, English compositions dealing with public health work, the application of sanitation and of the purity of food through the departments of cooking and domestic science, and the setting of problems in arithmetic involving facts of hygiene and vital statistics. The teacher's interest in the subject might be kept alive from time to time by the issuance of bulletins relating the subject of health to physical training, civics, hygiene, physiology, domestic science, English, drawing, arithmetic and other phases of school work.

Here is a direction in which our own Health and Publicity Committee, already productive of useful work, might perhaps accomplish even more of good for Colorado.

THE MEDICAL SCHOOL OF SALERNO.

For at least three centuries of the middle ages a great center for systematic medical study was maintained in a town of southern Italy which is now deserted and half forgotten. In an age when we are rapidly redeeming medical education from the relative chaos of a half century or so ago, it is interesting to read (*United States Naval Medical Bulletin*, volume 12, page 225) that at Salerno in the thirteenth century candidates for license to practise medicine were not admitted for public examination unless they had enjoyed three years of premedical instruction, four years' study of medicine, a year's instruction under a licensed physician, and a year's special study of anatomy in case they desired to specialize as surgeons.

The examination was based upon the teachings of Hippocrates, Galen, and Avicenna. It is well to remember, however, that anatomy was taught principally by the dissection of pigs, a well known compend of dissection in those days being the *Anatome Porci* of Coppho the Jew. A revolution-

ary law enacted by the learned prince Frederick II of Sicily in the thirteenth century provided for the dissection of a human body before the assembled faculty and student bodies at least once in every five years.

The first impulse to the development of medical teaching at Salerno was afforded by an excellent climate, and by the resulting establishment of a number of hospitals in the city at the time of the Crusades. By the close of the ninth century Salerno was famous for its physicians, and distinguished patients came thither from all parts of Europe. Among these was traditionally included that William Duke of Normandy who later became William the Conqueror of England; his ailment being a fistula and chronic discharge due to a poisoned arrow. The ancient chronicles of the city attribute the foundation of the Salerno medical school to four doctors, a Jew, a Greek, an Arabian, and a native of the city, each of whom lectured in his own language. The university was closed by Napoleon in 1811.

Medical education and practice in Salerno were open to women without restriction, the most famous of the "sweet girl graduates" of Salerno being one Trotula, who practised about the middle of the eleventh century. She was the author of at least two works dealing mainly with obstetrics and gynecology, in which are found directions for the prevention of perineal lacerations, for the treatment of uterine prolapse, for the operation of perineorrhaphy, and for the routine management of labor. One lady professor of Bologna, which city later replaced Salerno as a center for professional study for women, is said to have been not merely learned but so beautiful that it was necessary for her to lecture from behind a curtain!

The medical school of Salerno was for a long time admirable for the use of simple therapeutic measures such as bathing, heat and cold, fresh air, diet, and exercise, in preference to complicated pharmaceutical remedies. A very popular rhyming Latin poem on health entitled *Regimen Sanitatis Salerni*, published in the thirteenth century, contains the following Oslerian motto:
Si tibi deficient medici, medici tibi fiant

Haec tria: mens laeta, requies, moderata
diaeta,

or: If thou lackest doctors, let these three
be thy doctors: a cheerful mind, repose, and
moderate diet.

ABSTRACTS OF PAPERS.

To Be Read at the Forty-Eighth Annual Meeting of the Colorado State Medical Society, in Estes Park, Colo., Sept. 9th, 10th and 11th, 1917.

NOTE.—The abstracts given below are those which are available at the time of going to press with the August number of *Colorado Medicine*. The titles and abstracts here given are arranged in alphabetical order of the authors' names.

Greetings and communications will be read from the following ex-presidents of the Society now in the Medical Service Corps.

John R. Espey.
W. W. Grant.
J. N. Hall
W. A. Jayne.
Robert Levy.
A. C. Magruder.
W. W. Swan.
H. G. Wetherill.

X-RAY TREATMENT FOR SUPERFICIAL MALIGNANCY.

A NEW COOLIDGE TUBE TECHNIQUE.

H. P. Brandenburg, M. D.

Probable etiology. Diagnosis of lesions. The treatment—older methods.

The Coolidge tube technique. Observation of patient during treatment. Number of treatments and total time under x-ray.

Reaction. Results.

BLOOD TRANSFUSION.

Frost C. Buchtel, M. D., Denver.

Indications for transfusion. Importance of having compatible blood. Technique of examination. Technique of transfusion. Case reports.

NECESSARY COOPERATION IN PRENATAL CARE AND OBSTETRICS.

Foster H. Cary, M.D., Denver.

Conclusions drawn from investigations throughout the country prove that mortality and morbidity in child-bearing are second only to those of tuberculosis. The death rate from diseases caused by pregnancy and confinement in the United States is exceeded only in two of the leading countries. Prenatal care must necessarily be a matter of education not only of the profession but of the public as well.

Cooperation is absolutely necessary between the various organizations and obstetricians. A factor of vital importance is the employment of social service workers acting in harmony with the medical profession, the schools and the municipal hospitals.

TUBERCULOSIS IN CHILDREN.

George H. Cattermole, Denver, Colo.

Tuberculosis is contracted in early life. During the first four years many children die from this disease. From four to fifteen years there are not many deaths from tuberculosis. Reaction to the tests at this time indicates infection but not active disease. Usually these children are in apparent health but have infected lymph nodes which become large with any acute infectious condition. What can we do for these cases?

BREECH PRESENTATIONS.

M. R. Fox, M. D., Sterling.

Their frequency. Their occurrence as regards my practice. Resumé of literature, and practice of various physicians.

Diagnosis. The location of the breech, and the ability of the mother to deliver the breech.

Delivery and management. The delivery of the breech as regards the location of same, whether foot, knee, etc. Location at brim and size of pelvis.

Care. The care of the mother at the time of delivery. Care during the days in bed, and few days thereafter.

Discussion opened by Dr. J. H. Bush, Sterling.

A METHOD OF HEMOSTASIS IN RESECTING PORTIONS OF THE LIVER.

Leonard Freeman, M. D., Denver.

A case is reported in which a large portion of the liver, the gall bladder and part of the transverse colon were resected in one mass for primary carcinoma. This was accomplished with unusual ease and safety by means of tying off the section of liver to be removed with a strip of fascia lata, which was left in place, thus rendering the operation almost bloodless.

Attention is also called to the difficulties arising in the diagnosis of an abdominal tumor in spite of the conscientious application of our most scientific methods.

THE VON PIRQUET TEST, AND RESULTS OF ITS USE IN 464 COLORADO CHILDREN.

Emanuel Friedman, M. D., Denver.

Significance of a positive and negative Von Pirquet reaction. Prevalence of childhood tuberculosis in different localities, as based on results of cutaneous test. Prevalence of tuberculosis in Colorado children. Conclusions based on analysis of cases studied.

Discussion opened by Dr. A. S. Taussig, Denver.

WORK OF THE ARMY TUBERCULOSIS BOARDS.

O. M. Gilbert, M. D., Boulder.

A. The necessity for such work. B. The plan. C. Criteria for excluding tuberculous cases from military service; the necessity for a different standard of diagnosis and for different methods of procedure from those accepted and employed in civil life. D. The results. E. Suggestions that may be of value in our future efforts to control tuberculosis.

INSANITY; ITS PREVENTION AND TREATMENT AS A STATE PROBLEM.

Dr. George A. Moleen, Denver.

BIRTH REGISTRATION IN COLORADO.

J. W. Morgan, M. D., Denver.

War has called our attention to its vast importance. Has the boy reached the age of 21? Is the drafted man over 31? These questions cannot be answered by examination of the vital statistics of the state of Colorado.

"Why a birth certificate"? (a) To establish identity. (b) To prove legitimacy. (c) To show when the child has a right to enter school. (d) To show when the child has a right to seek employment under the child labor law. (e) To establish the right to inherit property. (f) To establish the liability to road and military duty, as well as exemption therefrom. (g) To establish the right to vote. (h) To qualify to hold title to and to buy and sell real estate. (i) To establish the right to hold public office. (j) To prove the age at which the marriage contract may be entered into. (k) To comply with the law.

Computations showing the probable num-

ber of births in the state. Duty of the doctors, illustrations of neglect of duty.

SPASTIC IRRITABILITY OF THE INTESTINAL TRACT.

Julius L. Mortimer, M. D., Denver.

The conception of the hyperkinetic symptom complex of the intestinal tract. Spastic disturbance viewed not as an independent affection, but as a symptom or manifestation of intestinal or general disease. The efficient coordination of the various functions of the digestive organs is dependent upon the proper innervation from two antagonistic systems of nerves, the autonomic and the sympathetic.

The purpose of intestinal motility, differentiation of types of intestinal motility. Influence of mechanical, chemical, vasomotor and nervous causes upon the motor functions of intestines.

Local intestinal spasm. Colon spasm, spastic obstipation, spastic diarrhea, proctospasm, etiology, symptoms, diagnosis, pathology, roentgen findings, differential diagnosis.

Discussion opened by Dr. R. W. Arndt, Denver.

ABSCESS OF THE CEREBELLUM.

W. V. Mullin, M. D., Colorado Springs.

Ninety-eight per cent of cerebellar abscesses are otitic in origin. Diagnosis is almost solely the province of the otologist.

Important for the general practitioner and child specialist to recognize early symptoms.

Symptoms and diagnosis.

Report of an unusual case with autopsy findings.

REPORT OF FOUR SURGICAL STOMACH CASES.

A. R. Pollock, M. D., Monte Vista.

Case I. Perforated duodenal ulcer, operation ten days after perforation, death six days after operation.

Case II. Perforated stomach ulcer, operation seven hours after perforation, recovery, remarks on method of treatment and drainage.

Case III. Stomach ulcer near cardia, removed by cautery, gastro-enterostomy.

Case IV. Stomach ulcer complicated by gall-stones, woman 64 years, gastro-enterostomy, cholecystostomy.

Indications for resection, excision and simple gastro-enterostomy.

Discussion opened by Dr. C. B. Lyman, Denver.

THE WAR'S INFLUENCE UPON PREVAILING MEDICAL THEORIES.

E. J. A. Rogers, M. D., Denver.

Can the theory of mechanistic adaptation explain all those psychic pathological phenomena to which our attention has been forcibly drawn by the war.

Is it not simpler and more rational to accept the hypothesis that the organism is a complex machine, somewhat analogous to a dynamo, by means of which an imponderable life energy expresses itself in physiological activities?

REST IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

S. W. Schaefer, M. D., Colorado Springs.

Historical; Advantages; Rationale; Methods of applying; Results.

FRACTURES OF THE TIBIA.

William Senger, M. D., Pueblo.

Based on a review of 92 consecutive cases treated at Minnequa Hospital during the past three years.

Statistics.

Use of x-ray in all cases.

Reduction of closed fractures under the fluoroscope. Functional vs. anatomical reduction. Use and abuse of the Blake method of treatment. Open operations rarely needed. Exceptions: Severe comminutions; spiral fractures; impacted fractures out of alignment.

Compound fractures: Treatment if seen early: (1) When the external communication is small. (2) When large. (3) When bone is protruding. (4) Treatment if seen late and especially after infection is evident.

Value and application of Carrel-Dakin method, culture controls; and leukocyte counts.

X-ray illustrations of various phases.

IMPORTANT DEFICIENCIES IN THE MEDICAL CURRICULUM—CLIMATOLOGY, HYDROLOGY, GYMNASTICS.

Henry Sewall, M. D., Denver.

It will be maintained that, especially in view of experience developed in the war, the themes mentioned form the most practical field of medical instruction.

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.

M. D. Shivers, M. D., Colorado Springs.

The large number of hopeless tuberculous not amenable to ordinary treatment is a stimulus to urge one to attempt most vigorous methods to give relief to this class of human wreckage. The position of surgical treatment for pulmonary tuberculosis is not well established. Operative cases are discards. Sauerbrück has given us the most satisfactory method for extrapleural collapse in the tuberculous. In pneumothorax cases impossibility of giving air classifies the case as surgical. Surgery is not indicated in the acutely ill. If surgical collapse is indicated in pulmonic tuberculous cavities then it should be clearly a rational measure in old empyema and bronchiectasis. The method as carried out resects from the back rib from the first to the eleventh. The operation should be done under local anesthesia. Great care should be used in tuberculous cases not to puncture the pleura and in empyema to stay clear of fistulous openings. Chest wall must be maintained in collapse by snugly fitting bandages, later by jacket.

Conclusions: Extrapleural thoracoplasty operation is clearly indicated in tuberculous lung, old empyema and probably bronchiectasis and spontaneous pneumothorax. Second, it is harmless intervention. Third, produces complete collapse, thereby relieving expectoration, lessening hemorrhage and affects subsidence of temperature, thus clinically benefiting a great number and curing a few.

Discussion opened by Dr. J. F. McConnell, Colorado Springs.

TRANSPLANTATION OF NASAL TISSUE IN THE TREATMENT OF ATROPHIC RHINITIS.

Frederick Sidley, M. D., Denver.

A report of six cases where transplanta-

tion was used after unsuccessful treatment with injections of paraffin. The use of tissue from the middle turbinate. The atypical cases, especially old cases, where sinus infection is an open question and where nasal and pharyngeal dryness are the chief symptoms, show better success from transplantation.

SEMINAL VESICULITIS AND ITS TREATMENT.

Wm. M. Spitzer, M. D., Denver.

Frequency of this condition. Causes. Results, local, sexual, and systematic. Accompanying lesions. Treatment of vesiculitis. Treatment of complications. Treatment of accompanying lesions. Need for haste in treatment at times. Treatment in author's hands. Focal infection with vesicle as source.

THE CONTRIBUTIONS OF THE PHYSICIANS OF COLORADO TO MEDICAL LITERATURE.

C. D. Spivak, M. D., Denver.

What constitutes medical literature. Sources for the study of medical literature in Colorado. The first medical contribution—who, when, where? The medical periodicals published in Colorado. A survey of the contributions of Colorado physicians to the Journal of the American Medical Association.

WATER HEMLOCK POISONING.

Mary R. Stratton, M. D., Denver.

(With report of eleven cases occurring at the State Home for Dependent Children, Denver, in April, 1917.)

Description of Water Hemlock (*Cicuta Occidentalis*). Botanical—Not "wild parsnip". Description, habitat. History of the plant and its poisonous properties. Characteristics by which it may be most readily recognized. Its poisonous properties.

Report of eleven cases under author's care in Denver.

Report of other cases on record in Colorado.

General remarks on symptoms, diagnosis, treatment; steps already taken to prevent future cases of poisoning.

EVERSION OF TISSUE MARGINS IN WOUND APPROXIMATION.

Chauncey E. Tennant, M. D., Denver.

Principles underlying normal repair. Cell proliferation. Properties and purpose of the blood serum. The common cause of latent low grade infections. The advantage of a well approximated wound margin and the recommendation for the eversion of all raw edges approximated by suture. The selection of suture material and suggestions for its use in the proper eversion of the varied tissue layers.

THE NATION'S NEED OF DOCTORS AND NURSES FOR THE ARMY.

H. G. Wetherill, M. D., Denver.

The Nation's need of doctors and nurses for the Army. One million five hundred thousand troops in France and ten million going if necessary. Draft age may be extended to 45 to get this number. Every physician must work for the government, directly or indirectly. Men under 45 who are "fit" may be put in the ranks if they fail to apply for commissions in the Medical Reserve Corps. Doctors probably will not be drafted as such. What Colorado has done to date. Colorado number 45 in list of states. What Colorado must do. Civilians of America must adapt themselves to scarcity of civilian doctors as has been done in France and England. Nurses necessary, and what civilian hospitals and the civilian population must do.

Physicians Wanted for Foreign Service.

The Washington headquarters of the American Red Cross has issued a call for 123 physicians for immediate foreign service. These are to include general practitioners, specialists in tuberculosis, and pediatricians. The mountain division, headquarters at Fourteenth and Welton streets, Denver, has been asked to assist in the recruiting, and is very anxious to furnish its quota of the required number. It is understood that physicians between the ages of forty and fifty years are preferred, although older and younger men than this will not be rejected if otherwise qualified for the service; no one subject to selective draft can be accepted for this service. Besides doctors, there are also wanted ten hospital superintendents and ten dentists. Applicants may apply to Dr. Thompson Anderson at the mountain division headquarters. Besides this special requirement, there is a standing need for general practitioners, surgeons and specialists in all fields of medicine, including x-ray and laboratory workers. Dentists and pharmacists are also needed.

Original Articles

THE DIAGNOSTIC AND PROGNOSTIC SIGNIFICANCE OF ALBUMINURIA.*

W. T. LITTLE, M.D., CANON CITY.

The dictum of Bright that albuminous urine is invariably the product of inflamed kidneys was accepted without question until 1877-78, when von Leube in Germany and Moxon in England published the results of their observations, by which they were convinced that albuminuria frequently occurred in individuals who were otherwise normal and in whom no evidence of nephritis could be found. Their conclusions have been confirmed by so many careful observers that a functional or so-called physiologic albuminuria is now accepted by most pathologists. No entirely satisfactory explanation has been made of the conditions present in these kidneys that permit albumin to filter through while the organs are apparently healthy, although several seemingly plausible theories have been offered. There are two varieties of albuminuria, however, that seem to fall within the range of physiologic processes. One is the albuminuria of the newborn; the other is the albuminuria seen in older children due to the upright position, or resulting from a change from the recumbent to the erect attitude.

That albuminuria is of frequent occurrence in the newborn is shown by the following summary of the work of German investigators. Fleusberg¹ examined the urines of one hundred and eighty-four infants during the first fourteen days after birth and found albuminuria in twenty-six percent. Martin and Ruge found it in twenty-three per cent of one hundred and nineteen infants examined. Cruse examined eighty-nine and found it in thirty-one percent, while Hofmeier found it in seventy-three percent of the urines of sixty-seven infants. They found that the albumin usually disappeared by the tenth day, and only in cases where it persisted was it of serious significance. The glomerular epithelium of

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

the young kidney seems peculiarly sensitive to circulatory changes as well as to irritants of any kind. Carr² calls attention to the frequency of albumin and casts in the urines of infants suffering from gastro-intestinal diseases. Moorse analyzed the urines of seven hundred consecutive babies suffering from various infantile diseases, three hundred of which were of the gastro-intestinal tract, and found albumin in ten percent of all cases.

From infancy to early adult life albuminuria will be encountered in individuals who show no other deviation from the normal. Often, however, they do show evidences of a subnormal state. They are pale, nervous and easily fatigued; show vasomotor weakness; complain of frequent headache and digestive disturbance. An increased lordosis of the lumbar spine has been advanced as a cause in the postural albuminurias, based upon the belief that the curvature causes a stasis of the renal circulation. My personal belief is that it is a stasis due to low vasomotor tone, as many of these patients will have either no lordosis, or one of so slight degree that it must be a negligible factor. I am also convinced that in most, if not all, cases of functional albuminuria appearing after the period of infancy, the epithelial cells of the glomeruli have been damaged by toxins. Barker and Smith³ report six cases of the orthostatic type in which they used the phenolsulphonephthalein and lactose tests. The case histories are as follows:

Case Histories by Barker and Smith.

Case 1. Male, aged sixteen years. Personal history: Frequent tonsillitis until he had a tonsillectomy and adenoidectomy six years before admission. Typhoid fever two years before. For a year previous to this he outgrew his strength and was generally run down. The albuminuria was discovered accidentally during a life insurance examination.

Case 2. Negro. Male, aged sixteen years. Personal history: Five years before had slight indigestion for one year.

Case 3. Negro. Male, aged sixteen years. Personal history unimportant. Physical examination: Symmetrical decay of the upper lateral incisor teeth; slight tonsillar and

general glandular enlargement; retromanubrial dullness; inguinal hernia.

Case 4. Male, aged twenty-five years. Complained of stomach trouble. Personal history, practically negative. Physical examination: Slight general glandular enlargement and arterial thickening.

Case 5. Male, aged twenty-four years. Personal history: Scarlet fever in addition to the usual diseases of childhood; malaria at six.

Case 6. Male, aged seventeen years. Personal history: Had the usual exanthemata and frequent tonsillitis as a child. An adenoidectomy was done four years before. Malarial fever during two successive summers, four and six years before.

All these patients showed a normal excretion of phthalein and lactose, and there was no evidence of renal disease other than albuminuria which was present only when in an upright position. With the exception of cases two and four all give histories of repeated infections. Case four must have had some sort of infection, focal or general, to account for the glandular enlargement and arterial thickening, leaving only case two in which a cause for the albuminuria is not apparent.

The three patients whose histories I here present also show unmistakable evidence of bacterial infection and toxic irritation of the kidneys. They differ from the six reported by Barker and Smith in that I found once in each case a small amount of albumin in the rising urine. In two cases this was accounted for by acute infectious colds. The outstanding features in these cases are the invariable absence of albumin in the rising urines (with the exceptions noted) and the variability in the time of appearance and in the amount of albumin. It emphasizes the importance of repeated urinalyses before one can safely exclude albuminuria.

Author's Cases.

Case 1. Male, aged fifteen years. Family history negative. Personal history: Bottle fed and mild rickets in infancy. Severe ileocolitis second summer. Frequent severe attacks of tonsillitis. Operation on tonsils and adenoids twice. Hay fever lasting all summer. Measles at age of nine. Complained

of lassitude, headaches and night sweats. Examination, December, 1915: A pale, well developed boy. Throat negative except for small tonsillar stumps. No glandular enlargement. Heart and arteries normal. Marked vasomotor instability. Systolic blood pressure one hundred and twenty. The urine voided at four p. m. showed a heavy cloud of albumin without casts. The following morning the rising urine was normal. A complete enucleation of the tonsillar stumps was now done and the boy kept in bed for a week. I then undertook a series of urinalyses with the following results:

Jan. 13, ninth day after operation, five p. m., following a mile walk: sp. gr., 1027; heavy cloud albumin; a few hyaline casts; no indican. He was again put to bed for ten days.

Jan. 17, one hour after breakfast: albumin, faint cloud.

Jan. 18, eleven a. m.: albumin a trace; small amount of indican.

Jan. 19, one and one-half hours after breakfast: albumin, heavy cloud; numerous hyaline and a few finely granular casts and cylindroids. Four-thirty p. m.: no albumin; urine normal.

Jan. 22. Rising: no albumin. Eleven-forty a. m.: albumin light cloud, one granular cast.

Jan. 24. Rising: no albumin. One-half hour after breakfast: no albumin.

Jan. 25. One hour after breakfast: albumin, light cloud. Three-thirty p. m.: albumin, faint cloud; no casts.

Jan. 27. Rising: no albumin. Two p. m.: no albumin. Three-thirty p. m.: no albumin.

Jan. 29. Rising: no albumin. Four p. m.: no albumin.

Jan. 31. Four-thirty p. m. after exercise: no albumin.

Feb. 1. Rising: no albumin. Noon: no albumin; no indican.

Feb. 2. Nine a. m.: no albumin. Ten a. m.: no albumin.

Feb. 5. Rising: no albumin. Nine a. m.: no albumin. Two p. m.: no albumin.

Feb. 7. Returned to school.

Feb. 8. Rising: no albumin. Four p. m.: no albumin.

Feb. 15. Rising: no albumin. Four p. m.: no albumin.

Feb. 18. Two p. m.: albumin, light cloud; indican, trace; no casts; calcium oxalate crystals.

Feb. 21. Rising: no albumin. One hour after breakfast: albumin, distinct trace.

Feb. 23. Nine p. m.: albumin, a trace.

Feb. 28. Sore throat. One-half hour after breakfast: albumin, well marked cloud.

Feb. 29. One-half hour after breakfast: albumin, well marked cloud; no casts; an occasional erythrocyte and cylindroid.

Feb. 2. One hour after breakfast: no albumin. Noon: no albumin. Three p. m.: no albumin.

Feb. 3. Rising: no albumin. One hour after breakfast: no albumin.

March 5. Rising: no albumin. Six p. m.: no albumin.

March 7. One-half hour after breakfast: no albumin.

March 13. One-half hour after breakfast: albumin, decided cloud. After dinner: albumin, trace; no casts.

March 28. Rising: no albumin. Three-thirty p. m.: no albumin.

April 16. Seven p. m., after a strenuous day: albumin light cloud; no casts; no cylindroids.

April 17. Four p. m.: no albumin.

April 25. Rising: no albumin. Two p. m.: no albumin.

May 4. One-half hour after dinner: albumin, light cloud; no casts.

May 25. Acute head cold. Rising: albumin heavy cloud; no casts. Four p. m.: albumin, moderately heavy cloud; no casts; a few cylindroids and oxalate crystals.

May 26. Rising: no albumin.

Aug. 22. One hour after breakfast: no albumin. Three p. m.: no albumin.

Sept. 19. Rising: no albumin. Eight p. m.: no albumin.

Sept. 23. Hay fever. One hour after breakfast: albumin light cloud; indican; a few hyaline casts and cylindroids; oxalate crystals.

Since the last date only infrequent examinations have been made. Albumin has been

found occasionally but only when the boy was not feeling well. His general health is much improved. Blood pressure readings have always been normal or below. Functional phthalein test: First hour, thirty-five percent; second hour, twenty-five per cent. He shows a moderate degree of lordosis, two and one-quarter inches.

Case 2. Female, aged fifteen years. Parents living and well. A younger brother died in 1915 of diabetes mellitus. Past history: Measles at two years. At seven had scarlet fever with severe acute nephritis. The year following was pale and languid, but two urinalyses were negative. Some months later I found albumin in one of three examinations. Last fall she again came under observation complaining of lassitude, morning headache and constipation. Examination August 26, 1916. Well nourished; good color; tachycardia, pulse one hundred and sixteen; arteries soft; heart normal; systolic blood pressure one hundred and eighteen; some nasal congestion from hay fever; tonsils large and ragged; no glandular enlargement; hemoglobin (Tallquist) sixty percent. The urine voided at eleven-thirty a. m. showed some albumin, a trace of indican, an occasional hyaline cast, and a few erythrocytes and leucocytes.

Aug. 28. Urine, rising: albumin none; sugar none. One hour after breakfast: albumin, faint cloud. Eleven-thirty a. m.: albumin none.

On September 1 a tonsillectomy was done.

Sept. 16. Urine, rising; albumin none. One hour after breakfast: albumin, heavy cloud; no casts. Eleven a. m.: albumin, none.

Oct. 7. Rising: albumin, none. One hour after breakfast: albumin, none. Noon: albumin, none.

Dec. 23. Five days after onset of grippe. Rising: albumin, faint trace. One hour after breakfast: albumin, very heavy cloud. Noon: albumin, heavy cloud.

Dec. 28. Rising: albumin, none. One hour after breakfast: albumin, none. Noon: albumin, none.

Jan. 27. Suffering from a cold. Rising: albumin, none. One hour after breakfast:

albumin, heavy cloud; no casts. Noon: albumin, light cloud.

Feb. 10. Rising: albumin, light cloud. One hour after breakfast: albumin, heavier cloud. One hour after dinner: albumin, very heavy cloud; no casts.

March 23. Rising: albumin, none. One hour after breakfast: albumin, none. One hour after dinner: albumin, none.

July 10. Rising: no albumin. One hour after breakfast: albumin, light cloud; no casts.

Sept. 4. Rising: albumin, none. One hour after breakfast: albumin, none.

Sept. 8. Rising: albumin, none. One hour after breakfast: albumin, none. After supper: albumin, none; no indican.

This patient lived some distance away and it was impossible to get daily urines to determine the appearance and disappearance of the albumin from day to day. At the present time she is in good health.

Case 3. Male, aged twenty-two years. Drug clerk. Parents living and well. Past history: Scarlet fever at eight years with acute nephritis. Measles at nine. Pertussis. Does not recall having more than one attack of tonsillitis, which occurred ten years ago. Catarrhal jaundice at fifteen. Physical examination: Appearance, healthy. Nose and throat, negative. No glandular enlargement. Radials thickened. Heart normal. Blood pressure, systolic one hundred and twenty-five, diastolic ninety. Hemoglobin (Tallquist) eighty per cent. Slight lordosis of lumbar spine one and seven-eighths inches. Says he is well all the time. Albumin discovered accidentally in course of life insurance examination. I then undertook a series of urine examinations to determine the nature of the albuminuria, with the following results.

Jan. 20. Rising: albumin, none. One hour after breakfast: albumin, light cloud; no sugar; no casts. Noon: albumin, none. Two hours after dinner: albumin, none.

Jan. 25. Rising: no albumin. Noon: albumin, none. Two hours after dinner: albumin, light cloud; one hyaline cast. Eight p. m., two hours after supper: albumin, none.

Feb. 8. Rising: albumin, none. Nine a.

m.: albumin, none. Noon: albumin, none. Two hours after dinner: albumin, light cloud. Four hours after dinner: albumin, none.

March 8. Rising: albumin, light cloud. One hour after breakfast: albumin, heavier cloud; occasional hyaline and finely granular cast. Two hours after dinner: albumin, none. Eight p. m., two hours after supper: albumin, none.

March 10. Phthalein test gave first hour, forty percent; second hour, fifteen percent.

This young man is now working a homestead in the mountains, and reports that he is in excellent health.

These cases well illustrate the type of functional albuminuria, the albuminuria of adolescence, in which other than the intermittent appearance of albumin, and, at times, a few hyaline and granular casts, there is no evidence of nephritis. The development later in life of Bright's disease strongly suggests that in a few of these cases there is an actual structural damage of the kidneys; but a majority of them either recover or continue indefinitely with the same urinary symptoms. I have wondered if there is not structural damage in all these, the disease terminating spontaneously and the kidneys healing, just as we so frequently see in lungs that show cicatrices of former tubercles.

Unfortunately, very little is known of the pathologic anatomy of these kidneys. Langstein reports a case of orthostatic albuminuria, studied by himself and Heubner, of a girl, aged ten years, whose urine contained at times large amounts of albumin which was considerably increased by physical exertion. There were no casts present. At times she suffered from headaches and vomiting. Death occurred several years later from tumor of the brain. A very careful histologic examination of the kidneys demonstrated the absence of any organic or degenerative change. The presence of tube casts with albumin would suggest something more than a benign condition. But even these, more especially the hyaline variety, have no serious significance. What, then, is the diagnostic value of albuminuria? Frothingham⁴ in a study of forty cases of

proved chronic nephritis, found it present all or most of the time in thirty-six of the cases. In four it was present so infrequently that its presence might have been overlooked even after several tests. Four of his cases also failed to show any casts. The most one can say for it is, it is a good guide for further study. It is only when one is able to detect beginning cardio-vascular change, or disturbance of the excretory functions, that he is justified in diagnosing an inflammatory lesion of the kidney.

A third variety of functional albuminuria which only needs mentioning, is that observed in young subjects following severe physical exertion, cold baths, or hearty meals containing an excess of proteid food—the so-called alimentary albuminuria. Von Leube found albuminuria in fifty-nine percent of raw recruits after forced marches or exhausting drills. In these the albumin quickly disappears after rest.

Prognosis. The prognosis of inflammatory diseases of the kidneys is not influenced by the quantity of albumin present in the urine, with the possible exception of acute glomerular nephritis. It is well known that some of the most severe cases bordering on uremia show little or no albumin or casts in the urine. Rather should one rely on the blood pressure readings and the excretory tests.

In those without evident organic kidney disease, the functional albuminurias, the outlook is not altogether rosy. A small percentage of them develop into true nephritics. In most of them the albuminuria permanently disappears, or continues to come and go. These individuals seem less resistant to the infections, particularly to tuberculosis.

In conclusion, I cannot do better than review the investigations of Barringer⁵, who took from the records of a large life insurance company the histories of three hundred and ninety-six men who were insured in 1900–1901, ten years before, and who were normal at that time except for the presence in the urine of serum albumin with or without casts. These three hundred and ninety-six men were divided into three groups. The first, one hundred and fifteen, showed al-

buminuria without tube casts. The second, two hundred and three, showed albumin and a few hyaline casts. The third, fifty-three, showed albumin and a few granular casts. The men showing albumin alone were five times more frequent before the twentieth year than after. The albumin and hyaline cast group showed approximately the same incidence in the second, third, fourth and fifth decades. The men with albumin and granular casts showed an increasing incidence in each decade until, between forty and fifty years, they were four times as frequent as between twenty and thirty years.

Ten years later seventy of the original three hundred and ninety-six men were visited and examined. Twenty of those visited had shown albumin but no casts in 1900-1901. None had developed interstitial nephritis; twelve had apparently cleared up; eight still showed albumin, four of these also showing tube casts. Thirty of those visited had shown albumin and a few hyaline casts when insured. Ten years later one had developed interstitial nephritis and two were doubtful; eighteen had apparently cleared up, showing normal heart and kidneys; nine showed the same condition of the urine that they did in 1900. Twenty of those visited had shown albumin and a few granular casts in 1900-1901. Of these, two had developed interstitial nephritis, and in five the diagnosis was doubtful. Eight were apparently normal as regards heart and kidneys.

Considering the entire series of seventy men, at the end of ten years thirty-eight, or more than half, were apparently normal as to heart and kidneys; ten showed evidence of chronic interstitial nephritis; two had diabetes; twenty-two showed much the same urinary conditions as they did ten years before, but with no circulatory changes.

The mortality of the original group was high, there being twenty-five deaths instead of sixteen for standard risks, deaths from tuberculosis being unusually numerous.

Barringer summarizes his findings as follows:

"1. Renal albumin without casts is more frequently found in young adults. It is ex-

ceptional for it to be a symptom of incipient nephritis. It is rather to be regarded as an evidence of lowered resistance which predisposes to tubercular infection. The mortality among these people is higher than among normal subjects.

"2. Cases of albumin with a few hyaline casts have no particular age incidence. The mortality among this group is also above normal.

"3. People with albumin and granular casts show much higher mortality than normal people, and a much greater tendency to renal and arterial disease than either of the preceding groups.

"4. Whatever the urinary findings, age is a factor in the prognosis of albuminuria, young people having the most favorable outlook as regards the possibility of an ultimate nephritis."

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DISCUSSION.

J. G. Hughes, Greeley: If by studying the newer clinical methods we can discover albumin in minute quantities in the urine, as has been claimed by Barker, of Johns Hopkins, we will probably find an explanation for some of the difficulties that have confronted us in the past in finding out the significance of albumin in the urine. We know, as Dr. Little has stated, that albumin is present in the urine after severe exercise, whether that exercise is taken by the adult or child, and that the orthostatic condition is a cause of the presence of albumin in the urine. If we want to determine the significance of this, we will have to do so along physiologic and pathologic lines.

According to Dr. Little's paper, in most of these cases the albumin in the urine is physiological. If we examine the urine of an athlete after exercise we will find albumin present almost invariably. If we examine the urine of a child after activity, we may find a certain amount of albumin, so I fully agree with Dr. Little that those things are really not significant of nephritis, and that albumin itself is not significant of nephritis. Albumin in the urine, with the presence of granular casts, and not simply hyaline casts from the tubules, is not sufficient to determine kidney function. I believe the urine of twenty-four hours should be examined; the quantity eliminated should be determined, also the quantity of solids eliminated, and then a chemical analysis made. After repeated

findings of albumin and casts, not of the hyalin type but granular, we may make a diagnosis of nephritis.

C. W. Maynard, Pueblo: In addition to what Dr. Hughes has said, I would like to mention the matter of technic in the determination of traces of albumin in the urine. I think probably the most common routine test is the heat with either acetic or nitric acid, and I have used that test myself for a number of years as a routine. I find that with that test I get a great many traces of albumin in which repeated examinations of the sediment do not show any casts. It is true, the reporting of "no casts" means simply you have not found them, and possibly you have not looked long enough for them. In these cases the best we can do is to look for them frequently and we may find them only after repeated examinations. It is a question whether the clinician should speak of a pathologic condition of the kidney in all cases in which he finds a trace of albumin in the urine after the heat and acid test. It occurs not only in infants, in adolescents, and in pregnant women in the last two or three months of pregnancy, but also in many other cases, where the urine shows no pathologic sediment. I think the cold nitric acid ring test is perhaps a conservative one. The most sensitive reagents will show albumin in nearly every urine. I think there ought to be a plea made for the use in these doubtful cases of the phthalein test. It is simple, and can be done in a short time without elaborate apparatus. In the cases where that does not give all the information desired, we should not forget the possibility of determining in the blood the retention of metabolic products, which has been well established as a procedure of value in the determination of kidney function.

Herbert B. Whitney, Denver: As to the question of so-called albuminuria of adolescents or physiological albuminuria, I want to say, in the first place, that I am firmly convinced that there is, strictly speaking, a physiological albuminuria which does not mean in any sense disease of the kidney itself, nor a granular or degenerative condition of the epithelium. Some of you may probably recall that some twenty years ago Senator of Berlin came out with a strong article in which he proved conclusively that albumin does exist in a normal condition in the urine, and that we may find albumin in every urine, if concentrated sufficiently, or if sufficiently delicate reactions are used. He boiled down large quantities of urine and found small traces of albumin. This is more frequent after exercise and after the ingestion of considerable quantities of proteid food like white of egg. These experiments form a fairly good basis for the conception of a physiological albuminuria which does not depend upon any disease of the kidneys, and in which there is no threat of disease of the kidneys in the future.

This is a matter of great importance in connection with life insurance. It has been my fortune to do a great deal of that work, and of late years to examine a great many young people for large industrial companies—girls, boys and adults, varying in age from fifteen to sixty years. The number of adolescents in whom traces of albumin

have been found has been enormous. I take pains to question these people carefully as to their previous history of scarlet fever and other infections, and in a great majority of the cases there has been the absence of any adequate cause for a nephritis. It is my firm belief that very little or no attention need be paid to a trace of albumin in girls and boys of about the age of fifteen to twenty years who present no other symptoms of a nephritis and give no history of any disease which would be adequate for the production of this condition. This has occurred to me not only with reference to insurance but with regard to advice given such individuals. The finding of albumin in the urine often starts a regime of strict diet and care as to exercise of young girls and boys, which seems to me wholly unnecessary. I think we should take a more optimistic view of these cases than we have in the past.

William M. Spitzer, Denver: It is not an infrequent occurrence to find albumin in the urine of adolescent patients. I examine the urine of every patient that comes into my office, and to my surprise I have found albumin without the presence of casts or of blood, or of other abnormal constituents of the urine, very frequently. I dare not say it is physiologic, because I know that in some cases it is indicative of disease. I am surprised that no one has called this idiopathic albuminuria, as they have named bleeding without demonstrable cause idiopathic hematuria. There are numerous instances of bleeding for which no cause can be found; even when the kidneys are decapsulated, as they are frequently, and pieces taken out, one finds no lesions which would account for the leakage of blood. It has been said, and it is true, that the glomeruli are frequently found swollen and the epithelial cells wiped off at certain spots. This same lesion has been found often in idiopathic albuminuria.

As to the position of the kidney, there is no question but that in those cases in which a malposition of the kidney is found an albuminuria may be present; it is then due to a passive congestion of the kidney, and in these cases the albumin alternates with red blood cells; and one finds both albumin and red blood cells in some cases.

As to the presence of casts, I do not know that we should attach very much significance to them. I do not think anybody does. Hyalin casts certainly mean nothing to me unless they are accompanied by albumin or granular casts. However, if these cases are permitted to go on, and I do not know how we will stop them, the most of them eventually will have nephritis. Diet seems to have no influence, and rest and exercise have no influence on the albumin in the urine.

As to the phthalein test, in all the cases I have examined and used the phthalein test, the phthalein output was not only normal but was higher than normal. That is strange, and it is one of the things that have thrown discredit upon the phthalein test. Albuminuria is frequently found in cases in which there are infected tonsils or other foci of infection, and when these foci of infection are cleared up the albumin disappears, but that does not warrant the removal of tonsils in all cases of albuminuria. I do not think these cases are extremely good operative risks, anyhow. Within the last month I have seen about twelve such cases who have claimed exemption from army service because of the presence of albumin in the urine. If the presence of albumin in the urine is pathologic, I presume we should say exempt them, and the important question to us is whether it is pathologic or physiologic.

SOCIAL INSURANCE AS A PUBLIC HEALTH ISSUE*

JOSEPH M. SHAPIRO, M.D., M.S. (P.H.),
CLEVELAND, O.

Public health problems or activities are usually marked in a society whose social instinct is highly developed. As a society grows more complicated there arise within it greater social problems that call for analysis and consideration. Among these the health problem is one of the most important, since without good health there can be no happiness, the ultimate aim of individuals as well as of society at large. Therefore large communities create health departments, whose duty it is to make the highly developed social life with its many public institutions free from dangers to the health of the individual or, in other words, to facilitate the preservation of health and prevention of disease. Thus, the ills of society, such as a high infant mortality, a high tuberculosis death rate, the abuses of tenement life, and pollution of food and water supply are to be checked and prevented by the health authorities.

Industry is an integral part of modern society; its existence is of distinct advantage to the community, yet at the same time the methods of industrial operation create public problems that are baffling to the sociologists and medical men. It sounds like a paradox, but it is true that while industry increases the wealth of a few, it also creates a fertile field for the flourishing of dependence and poverty. It is proven that the wage earners are on the lowest rung of the economic ladder, hence, they are compelled to congregate in slums and to consume the cheapest quality of food, and the various diseases that go hand in hand with poverty are very prevalent with them and their families. Infant mortality is prevalent among them out of proportion to their numbers. They fill the ranks of those dependent upon charity, as is proven by the Association for Improving the Condition of the Poor in New York, which states that sixty per cent of all appeals for charity come

from the homes of the workers. Investigators constantly point out the deplorable conditions inside and outside most of the big factories; much has been written on occupational diseases, on the bad effects of improper sanitation, of lack of ventilation in factories and of long hours; but many employers are slow in responding to the suggestions for modern improvement, and factory conditions remain in many cases unchanged.

One measure has recently been brought up that has the potentiality of greatly diminishing the ill effects of industrial life by combining the efforts of all concerned, employer, employee and health authorities. It is that dealing with social insurance. This measure is not an attempt to create a social revolution nor is it proposed merely for the purpose of paying a few more dollars of insurance to the employees. It has arisen as a logical outcome of the study of factory health hazards, of the prevalence of sickness among the wage earners, and of lack of economic safety for their families. It has, for instance, been proved that each worker loses on the average nine days in the year on account of sickness. He is then short of income, his family is short of food, he is prevented from obtaining a complete recovery by worry and insufficiency of food; he is also often compelled to return to work while yet sick. How, then, will social insurance help him? Social insurance aims to provide a cash benefit for the sick employee equal to two-thirds of his wages. This benefit would allay the sick man's financial distress and thus do away with the obstacles in his way to a speedy and complete recovery. Furthermore, at present much sickness goes without proper attention because of poverty. The Rochester survey of the Metropolitan Life Insurance Company shows that thirty-nine percent of the cases of illness did not have a physician in attendance and that only forty-five percent of those sick but able to work were receiving medical attention. With social insurance in effect, free medical service at all times will allow the honest worker to attend to his ailments before they have reached a serious state. It may be argued

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

that the worker will abuse this privilege of free medical service, as is the case with medical contract work. Social insurance has anticipated this human frailty and has instituted the office of the medical referee, whose duty it will be, among other things, to prevent the organization from being invaded by malingerers through the investigation of the man's sickness reports and benefit claims. Besides, the relation between the physician and the employees will be somewhat different under social insurance from what it is in contract work. The employees will be allowed to call any panel physician they prefer. This will do away with the present discontent among many employees in industries that use the medical contract system. Only recently the employees of a certain Colorado concern requested to be allowed to employ their own physician in return for their monthly hospital dues.

With social insurance, the free medical service will be universal, at least as far as the worker is concerned, and there will be no contemptible line drawn between the private and company physician.

A distinct feature of social insurance will be the establishment of periodic physical examinations, given by the above mentioned medical referees to the employees. These examinations also will indirectly prevent the indiscriminate use of free medical service, but their chief value lies in the amount of preventive work that can be accomplished through them, for the physician will be able to detect and correct minor ailments that may be the forerunners of serious trouble; through them the man will be fitted to his job; they will serve as a means of concrete education in health matters to the employees. The value of physical examinations given to supposedly healthy employees is being brought out in the government examinations for army purposes. We all know the great percentage of physically unfit, but what is significant is the fact disclosed in New York, that ninety percent of those declared to be physically unfit suffered from only minor ailments. It has been found in my experience that most of the men examined in industrial institutions do not know

of their existing physical defects, and therefore it is to be feared that their slight ailments may remain unattended to and perhaps lead to more serious ones.

Under compulsory health insurance the employer, employee and state will contribute to the insurance fund. This will create an economic incentive for the employer to improve factory and working conditions that tend to develop occupational and degenerative diseases of middle life. He will be interested in reducing his premium, which will naturally fall with the smaller amount of morbidity among his employees. Not only will he feel like improving the sanitation, ventilation and general environment of the factory but he will also find it advantageous to reduce the working hours, since it is proven that shorter hours keep up the vitality of the employee and increase his efficiency. The employer had already learned the effect of factory improvement upon the reduction of accidents, but it required the Compensation Act to bring him to its accomplishment.

Now, social insurance will bring before his mind the need of preservation of health. "Health first" will become the slogan in addition to "Safety first".

The measure will be a legislative one, and the insurance commission will have police power for enforcing it. Of the three members of the insurance commission, one should be a physician; in close relation to the commission is to be the representatives of the state medical societies, including the state commissioner of health. The local funds will be in charge of a committee from the local medical societies and a representative of the city health department. The value of this arrangement is evident: it will bring the health authorities face to face with the problems of a well defined class of the community, and they will transfer their preventive work to the fertile field in industry. Not only will the study of occupational diseases and means of their prevention be advanced (because of the possibility of keeping uniform records and statistics in every industry), but the employer and employee also will cooperate with the public at large in securing wholesome water and food supplies,

better school hygiene, more playgrounds and parks. It may seem to an outside observer that the advocates of social insurance are yet in the exalted state of the dreamer who has grasped a new but impractical idea; but what can he say in the face of the fact mentioned by Dr. Zacher, the world renowned authority on health insurance, that twelve years have been added to the worker's life span during the thirty years of health insurance in Germany.

There is yet to be considered the advantage to public health of maternity benefits that will preserve the health of the mother before and after the childbirth period and help to rear a healthier new generation.

Old age pensions will become a feature in the proposed system. It is hoped that unemployment insurance also will be provided for, because it is known that unemployment creates poverty and then disease. Certain members of the profession go as far as to believe that social insurance will eliminate labor unrest, that a new science, industrial psychiatry, will teach the employers the value of stimulating the interest of the laborer by making him something more than just a tool of production.

Social insurance is not a panacea for all ills; if it is adopted and carried out properly it will go down in the history of medicine as a measure that contributed greatly to health preservation.

In conclusion, there may be mentioned the community experiment fostered by the Metropolitan Life Insurance Company and conducted by the National Association for the Study and Prevention of Tuberculosis. The former organization has made a survey of its policy holders and has found that it pays to supervise the health of its members rather than to allow sickness to be neglected and premiums to rise. Lately it began extensive work for the purpose of learning and proving how tuberculosis can be eliminated from a community. Now, if social insurance aims to distribute the cost of premiums, nevertheless its purpose and certainly its result will be the prevention of loss by disease through early and adequate medical care, through cash benefits, through the collection of accurate statistics on occu-

pational diseases and through cooperation with the health department in the improvement of the worker's neighborhood environment.

In view of the feverish activity of to-day in the matter of the preservation of public health, the medical profession as a whole must be interested in the potentialities of social insurance as a public health measure.

Mt. Sinai Hospital, Cleveland, O.

ASEPSIS AND ANTISEPSIS IN MODERN DENTISTRY.*

S. W. SCHAEFER, M.D., COLORADO SPRINGS.

One of the great forward steps made in medicine during the last few years has been the realization of the importance of the teeth as a causative factor of disease elsewhere in the body. The proof of this relationship has elevated the dentist from his former rôle, which was largely that of a mechanic, to a most important one in preserving general bodily health and aiding in the cure of disease. These facts all of you already know and you probably know everything I may say tonight, but my main object is to impress upon you the importance and necessity in your work of a more rigid application of the rules of asepsis and antisepsis than the majority of dentists customarily use.

Modern surgery began with Lister and his work was based on that of that wonderful Frenchman to whom we owe so much, Louis Pasteur, who overthrew the doctrine of spontaneous generation. Although Harvey, two centuries earlier, had laid down the law, *omne vivum ex vivo*, there were still those who held that this did not apply to the lowest forms of life. As Abel says, "Homer wrote of autochthonous men who sprang from the soil; the sixteenth century saw recipes for the manufacture of frogs and mice, and in later days it was claimed that lower forms of animal life must have developed spontaneously because the Bible makes no mention of their having been taken into the ark by Noah". It was essential to the development of bacteriology, which depends

*Read before the Colorado Springs Dental Society, April 8, 1918.

largely upon sterilization, to dispose of the theory of spontaneous generation and to show that lower, as well as higher, forms of life breed true. This Pasteur did with the aid of the Englishman, Tyndall. One of Pasteur's original experiments by which he proved that there was no such thing as spontaneous generation is rather interesting. He took several sterile flasks containing sterile broth, incubated them and showed that no fermentation occurred. Then he took some of these flasks and opened them in the streets of Paris where the air was quite dusty, and these flasks very promptly and vigorously fermented. Other sterile flasks he exposed in quieter parts of Paris and in smaller towns, and these fermented, but less promptly and less vigorously; still other sterile flasks were exposed in the pure air on top of one of the highest of the Alps and these flasks remained sterile. In this and other ways Pasteur showed that fermentation is due to the growth of living organisms, and that each kind of fermentation, like that in beer, wine, and milk, is due to specific organisms. Furthermore he showed that a temperature high enough to kill these organisms stops fermentation. Along this line he went further still and demonstrated that putrefaction, like fermentation, is due to bacterial growth. If each kind of fermentation has its specific organism, why not each disease have its specific bacterial cause? Exposure to small pox does not develop typhoid fever. The answer to this question has been given by the discovery of the specific causal agents of many diseases, and when found out and tested, their specificity is demonstrated.

On this work of Pasteur, Lister laid the foundation of modern surgery. In 1867 Lister published his first paper on the "Antiseptic Principle" and Lister's original surgery was antiseptic surgery. The wound was bathed in carbolic acid and carbolic acid sprays were going in the operating room in order to sterilize the air. From this crude antiseptic surgery with its needless irritation and destruction of tissue has developed modern aseptic surgery which in clean cases by the use of sterile rubber gloves on the hands and of instruments and

dressings made sterile by the means of heat, tries in every possible way to avoid the irritation due to the use of antiseptics. As a rule in modern surgery in clean cases the only antiseptic used is for the sterilization of the skin before the incision is made; if during the operation it is necessary to wash the hands in an antiseptic solution they are rinsed in sterile water before again touching the wound.

From my observation of dental practice struck with the fact that modern dentistry as commonly practiced is partly still in the pre-Listerian period, partly in the antiseptic period, and to only a slight extent in the modern aseptic stage. In order that dentistry may realize to the utmost its opportunity and may be of the greatest service to mankind—and service is the only excuse for the existence of any profession—it seems to me it must make use of the principles of asepsis to a greater extent than it has hitherto employed them. All of us have heard in this very room the statement made by one of our most eminent physicians that no dead tooth and discussion with dentists I have been is a good tooth or should be left in the mouth. While certainly no dead tooth is as good as a living tooth, yet even a dead tooth if properly treated may be better than any of its substitutes, and can usually be prevented from being dangerous to the body. The proper treatment of such a tooth requires the most rigid asepsis and lack of such a technique has been the cause of many blind abscesses and has given the dead tooth its bad reputation.

The greater aseptic technique that seems advisable may be considered under three headings: the care of the hands; of the instruments; of the towels, napkins and dressings.

As to the hands: mere scrubbing of the hands with a hand brush is probably all that is necessary for the average dental work unless the hands have been infected with pathogenic material, when in addition they should be soaked in alcohol or a solution of bichloride of mercury. I have repeatedly seen dentists examine an infected tooth that has just been extracted, put their fingers on

the pus, and then go on with their work with only the most cursory washing of their hands. For the more difficult dental work in which the operator comes in contact with blood vessels and soft tissue even greater care of the hands is necessary, and I believe that in the filling of root canals sterile rubber gloves are going to be worn by those dentists who get the best results.

As to the instruments: the problem of sterilization is here very simple, for heat is the best method of disinfection and boiling in water is the best method of applying heat. So all instruments that are to be used in an operation should be boiled, and after being boiled should be kept sterile. I have seen dentists carefully boil a hypodermic needle to be used to inject solutions into the gums, and then before using it wipe it dry with a clean but not sterile towel. Such a procedure of course did away largely with the benefit of boiling. In addition to the ordinary instruments, root canal points can also be sterilized in this way and care should then be taken to keep them sterile. Then there is the common practice of winding cotton around broaches, which are to be inserted into root canals, with unsterile hands. In this way even though the cotton is sterile and the broaches boiled, infection will be carried in. The better way would be to wind the cotton on the broaches and then sterilize by steam as in the case of the dressings, and thus a supply of sterile cotton wound broaches may always be kept on hand.

In order to keep the instruments sterile after they have been boiled until they are ready for use, sterile towels and dressings are a necessity. All towels that cover the operating stand and all cotton and gauze that goes into the patient's mouth should be sterilized by steam. For all these various sterilizing operations (instruments and dressings can be very easily done together) there are several different forms of apparatus on the market. In this connection it is well to remember that sterilization with steam under pressure is more effective and quicker than without pressure but if sufficient time is used as good results can be obtained with the simpler non-pressure ap-

paratus. By having the operating stand covered with a sterile towel the instruments after they are boiled can be laid thereon without danger of their becoming soiled before being used as well as during the operation. After the operation the instruments should in every case be boiled before being replaced in the cabinet, so as to prevent any infection of the cabinet, and then should be boiled again immediately before use.

And now a word as to the mouth itself. For ordinary dental work no special technique is necessary, but for root canal work the tooth and gum should first be swabbed with iodine and then a sterile rubber dam applied. Remember that in root canal work, no matter how perfectly the canal is filled, it is not good work unless both the canal and the filling have been kept sterile.

In the operating room there should of course be no dry dusting or sweeping and the floor and walls should be of such material that they can easily be washed, and this should be done frequently. The hand-piece of the engine should also be wiped before each operation with a cloth wet with alcohol or a dilute carbolic solution, or better still be boiled in a soap solution.

At present the use of the x-ray is most important in dental work and probably no one sees the damage done by infection more than the radiologists, yet they themselves are often not as careful as they should be. They will adjust the tube, put the film in the patient's mouth, adjust the tube again, and then adjust the film again and so on often for several times without even disinfecting the apparatus or washing their hands. In this way many diseases, as syphilis, diphtheria, etc., might be carried from patient to patient. Certainly between cases the part of the x-ray apparatus that it is necessary to touch in order to make the adjustments should be cleaned with alcohol or a carbolic solution.

Some of you may think that my suggestions are needless and not practical. If you will make the effort to try them I think you will be surprised at the ease with which they may be carried out, and your results will, I am sure, convince you of their being quite worth while. And they are given by

one who has had practical surgical training even though he is not now doing surgical work.

In conclusion let me emphasize what I have tried to bring out in this paper: the need of dentists employing a more rigid aseptic technique, and the advantage of the aseptic over the antiseptic in that there is no needless destruction and irritation of tissue.

News Notes

The American Academy of Ophthalmology and Otolaryngology held its twenty-third annual meeting on Monday and Tuesday, August 5th and 6th, in Denver. The principal meeting hall was the assembly room of the Denver County Medical Society. Several of the principal officers of the Academy were absent on war service. The meeting, which was arranged with the active cooperation of the Colorado Ophthalmological Society and the Colorado Otolaryngological Society, took the place of the fourth Colorado Ophthalmologic Congress. In connection with the Academy meeting a public meeting on the reconstruction and re-education of crippled soldiers and sailors was held at the Central Presbyterian Church at 8 p. m. on August 5th. On the afternoon of August 6th the visiting Fellows of the Academy and the ladies were taken for an automobile ride through the Denver mountain parks, dinner being had before the return from Bear Creek canyon. Mrs. T. E. Carmody acted as Chairman of the Ladies' Committee. Papers were read by Dr. F. E. Wallace of Pueblo on orbital cellulitis, by Dr. Edward Jackson on eclipse blinding, by Dr. H. A. Smith of Delta on facial paralysis after mastoid operation, by Dr. H. L. Baum on complications of tonsil and adenoid operations, by Dr. W. C. Bane on the wire snare in tonsillectomy, and by Dr. T. E. Carmody on hare lip and cleft palate.

Dr. Carl Koller, who in the early eighties discovered the anesthetic properties of cocaine and the possibilities of local anesthesia, was in Denver a few days in the latter part of July.

Mr. James H. Pershing of Denver, widely known in Colorado among the members of our profession, was on July 10 elected president of the Colorado Public Health Association.

The War.

According to a press report, the first United States soldier to be killed in the war and the first to be wounded were both in the medical corps.

Dr. W. T. Brinton of Cripple Creek has been given a captaincy in the M. R. C.

Dr. W. K. Hotchkiss of Brighton, now in the service, has been put at the head of the x-ray work in base hospital number seventy-two and will probably sail for France in August.

Lieutenant L. H. Wade of Denver left on July 27 on orders to report at Camp Greenleaf, Fort Oglethorpe, Ga. During his absence in army service his professional interests will be taken care of by his associate, Dr. F. B. Stephenson.

Captain H. W. Wilcox of Denver received army orders to leave about August 1 for Camp Greenleaf.

Lieutenant William Roberts of Denver, who was at Fort Riley until recently, is now stationed at Jacksonville, N. C.

Dr. E. D. Downing of Woodmen has received a commission as first lieutenant in the M.R.C. and is awaiting orders to report for service.

Dr. H. B. Killough of Pueblo has been given a captaincy in the M.R.C.

Captain C. Gillaspie of Boulder was ordered to report for duty at Camp Greenleaf about August 1.

Dr. W. P. Hunnicutt of Pueblo has resigned his position as assistant superintendent at the state hospital for the insane and has opened a private home for nervous patients.

About thirty-three per cent of the Pueblo County Medical Society's members are either in active service or have received commissions and are awaiting call to service.

Lieutenant Clyde L. Taylor of Denver left in the early part of July to report at Fort Oglethorpe.

Captain Philip Hillkowitz of Denver left July 28 on orders to proceed to Rockefeller Institute, New York, for instruction, after which he will go to the army medical school at Washington, D. C. During his absence his office will be maintained in Denver and his professional interests taken care of by his associate, Dr. Helen F. Craig.

Captain Fosdick Jones, who returned from France to Denver on a thirty days' leave, has since received orders to report at Washington for further instructions.

Captain B. A. Filmer, formerly associated with Dr. E. R. Neepser of Colorado Springs in the practice of ophthalmology, writes from abroad, "The ship on which I sailed has arrived safely overseas."

Dr. W. A. Kickland of Fort Collins has been commissioned a captain in the M.R.C.

Dr. Philip Work of Pueblo, now on the other side of the Atlantic, has recently been promoted to the rank of major. Pueblo thus can claim the distinction of having the youngest officer of the rank of major in the medical department of the army.

Lieutenant C. E. Condon of Breckenridge received orders to report August 2 at Camp McArthur, Texas.

Captain John G. Wolf of Pueblo left July 20 on orders to report at Fort Oglethorpe.

Base hospital unit number twenty-nine sailed July 6 and arrived safely in England. Colorado's "Twenty-nine" is said to have been reported from Washington as the most complete of any of the fifty base hospitals organized by the Red Cross for service in Europe. With the exception of Lieut. Col. John B. Anderson, of the regular army, placed in command of the unit by the War Department, the entire commissioned personnel comes from Colorado. The doctors and nurses in this unit are so well known to the profession in Colorado that its work in France will be followed with more than ordinary interest.

Major J. N. Hall was in Denver for a few days early in August.

Dr. F. R. Spencer of Boulder has accepted a commission in the Medical Reserve Corps. During Dr. Spencer's absence, his practice will be cared for by his partner, Dr. C. L. LaRue, who also applied for a commission in the Medical Corps, but was unable to satisfy the physical requirements of the service.

Dr. Saling Simon, superintendent of the National Jewish Hospital in Denver, has been given a captaincy in the Medical Reserve Corps, and will be assigned to tuberculosis work.

Captain Byron B. Blotz of Rocky Ford has been ordered to Fort Riley, Kansas.

THE VOLUNTEER MEDICAL SERVICE CORPS.

Dr. Franklin Martin, member of the Advisory Commission of the Council of National Defense and chairman of the Council's General Medical Board, authorizes the following:

Questions likely to arise in the minds of doctors seeking membership in the Volunteer Medical Service Corps are answered in a questionnaire, which is being sent in quantity to the executive committees of the corps in the several states. These executive committees are now being appointed.

The central governing board of the corps, which is a committee of the General Medical Board of the Council of National Defense, makes it plain that the information in the questionnaire is not complete, as cases relating to eligibility are constantly arising. As previously announced, this corps is for the doctors not eligible to enrollment in the Medical Reserve Corps because of physical disability, age (over 55), essential public or institutional need, or dependents.

The insignia for the corps have been designed and passed upon by the Council of National Defense, and the buttons will shortly be ready for distribution. The design is an openwork shield with the medical caduceus and wings, surmounted by the letters V. M. S. C.

The executive committees in each state will be furnished lists of the applicants for membership. The questions and answers are as follows:

Information on the Volunteer Medical Service Corps.

1. How should I apply for membership?

Write to the Medical Section, Council of National Defense, and application blanks and circulars of information will be sent. When received, fill out the application form in full, being guided by instructions contained in the rules of organization and the circulars of information.

2. What shall I do with application form when completed?

Forward to the Medical Section, Council of National Defense, Washington, D. C.

3. What is to be gained by the creation of this organization?

A classification as to the availability of all physicians not eligible for military service.

4. What is meant by classification?

Our record of information furnished by the physician himself, so that if the future demands each one could be used to the best advantage.

5. What is meant by availability for service?

Information of record, so as to determine where, when, and how physicians can be requested to render service.

6. Who are eligible?

All physicians who would be accepted by the Medical Reserve Corps were it not for physical disability, age (over 55), essential public need (boards of health and the medical care of isolated communities), essential institutional need (medical schools and hospitals), or dependents. Women physicians are eligible.

7. How will eligibility to this corps be determined?

Information obtained from application blanks, three personal references, and the executive committee in your state will be considered by the central governing board, which shall determine final action.

8. How do I become a member of this corps?

By vote of the central governing board.

9. How will physical disability be determined?

If you have applied for a commission in the Medical Reserve Corps and are rejected because

of physical disability, that information will be of record. If a physical disability is obvious, a statement by the executive committee to that effect is all that is necessary; otherwise apply for commission in the Medical Reserve Corps, and if rejected physically that rejection will be of record in this office.

10. Does membership in the corps carry with it rank and pay?

This corps is not authorized to give rank. Arrangements will be made between a member and the agency requesting service. The question of compensation and place of service, whether with or without rank, must be determined at that time.

11. Can any member of this corps be ordered to active duty?

No member will be ordered to render any service. Requests to accept service according to qualifications and availability will be made, such service to interfere as little as possible with already existing duties.

12. What will be the probable character of this service?

Question 22 of the application blank is as follows:

Are you available for any of the following services:

a. Consultant (medical service, surgical service, public-health service, special service—what?)

b. Institutional (laboratory, administrative, medical service, surgical service, special service—what?)

c. Local or medical advisory boards.

d. Reclamation of registrants rejected for physical unfitness.

e. Services to needy families and dependents of enlisted men.

f. Sanitation.

g. Miscellaneous service.

13. Can I be admitted to the Medical Reserve Corps if I become eligible after election in the Volunteer Medical Service Corps?

Yes; but notify the central governing board that you have accepted a commission in the Medical Reserve Corps.

14. How is essential public or institutional need determined?

By the central governing board, which will be guided by information obtained from application blanks, personal references, executive committee of the state, Surgeon General's Office, and officials of colleges, hospitals, boards of health, and community.

15. How is eligibility of physicians because of dependents determined?

By the central governing board, being guided by information secured.

16. Do I receive insignia to show membership in this corps?

A small badge has been authorized by the Council of National Defense. This will be issued to each member of the corps.

STORAGE OF FARM PRODUCTS.

The U. S. Bureau of Markets, cooperating with the State Marketing Committee and the Colorado Agricultural College, is undertaking at the present time an extensive campaign to increase the facilities for storage of fruits and vegetables throughout the state of Colorado. During the past season in Colorado millions of pounds of food products decayed, spoiled or froze, due to lack of storage facilities, or because cars could not be secured to move the crops to market.

The services of a storage expert were secured early in May. This expert has been visiting the

producing sections of Colorado, instructing the growers in the proper methods of storage, and aiding them in solving their storage problems. It is desired that every farmer throughout the state shall know of this campaign and of the free help and counsel of the storage expert.

The Bureau of Markets is in a position to give reliable information on the proper methods of storage, and to help solve individual storage problems. Further information may be obtained from the U. S. Bureau of Markets, Room 26, Custom House, Denver.

THE BRITISH MEDICAL MISSION IN AMERICA

After a tour of many American cities, which enabled them to meet and address representative groups of American physicians and surgeons, Sir James Mackenzie, noted heart specialist of Edinburgh and London; Colonel Sir William Arbuthnot Lane, veteran surgeon of the Zulu, Egyptian and Boer wars, and authority on bone surgery, and Colonel Herbert Alexander Bruce, of Toronto, now consulting surgeon to the British armies in France, comprising the medical mission sent by the British government to this country, have returned to Great Britain.

At the annual meeting of the American Surgical Association, Sir Arbuthnot Lane told of the treatment of thousands of soldiers wounded in the face, some with jaws gone, others with cheeks or noses shot away. Colonel Lane is consulting surgeon at the Queen's Hospital at Sidcup, where this facial reconstruction or plastic surgery is the special work. "The man who loses an arm, a leg, or is injured in the body, can go back to the bosom of his family, but the man whose face is distorted, no matter how much his family may love and cherish him, suffers most," said Sir Arbuthnot. "So I began to isolate these cases, beginning with five doctors. This start has developed into a magnificent hospital with 750 men, and we are literally making new faces. We have enlisted the services of the best dentists, sculptors, wax workers, and surgeons, and developed specialists in transferring bone from other parts of the body to the face. If you could see how happy these men are, it would be a lasting satisfaction to know their gratitude."

After their attendance upon the sessions of the American Medical Association convention, the visitors made a trip to Rochester, Minnesota, as guests of the Mayo brothers. In Boston, on June 19, the visitors spoke at sessions of the Massachusetts Medical Society in the Boston Medical Library. After this, came visits to Detroit, Cleveland, Pittsburgh, Philadelphia and New York City, accompanied by Dr. Franklin Martin, member of the advisory commission of the Council of National Defense and chairman of the General Medical Board, and Major Henry D. Jump, of the General Medical Board, arrangements being made in advance for them to speak at meetings held under the joint auspices of the state committees, medical section, Council of National Defense and the local medical societies. Upon all these occasions the visitors urged the need of physicians at the front, and warmly seconded the efforts of the state committees, and of Dr. Martin and Major Jump, in appealing to the doctors to enroll in the Medical Reserve Corps, Naval Reserve Force and Volunteer Medical Service Corps.

At a meeting that thronged Carnegie Music hall, Colonel Bruce said that the work of the medical men in the armies had stamped out typhus and typhoid fever, there being when he left France

only twenty-seven cases of typhoid fever in an army of two million men.

On the eve of their departure, the distinguished visitors were entertained at a dinner given them by the New York doctors at the Metropolitan Club.

U. S. Control of Common Labor.—On August 1, the supplying of war industries with common labor will be centralized in the United States Employment Service of the Department of Labor, and all independent recruiting of common labor by manufacturers having a payroll of more than 100 men will be diverted to the United States Employment Service. This is in accordance with the decision of the War Labor Policies Board as approved by the President on June 17. (The War Labor Policies Board is composed of representatives of the War, Navy and Agricultural Departments, the Shipping Board and the Emergency Fleet Corporation, the War Industries Board, and the Food, Fuel, and Railroad Administrations. Its chairman is Felix Frankfurter, assistant to the Secretary of Labor.)

The above action was found necessary to overcome a perilous shortage of unskilled labor in war industries. This shortage was aggravated by an almost universal practice of labor stealing and poaching.

While the restrictions against the private employment of labor apply only to common labor at the present time, these restrictions will, as soon as possible, be extended to include skilled labor. In the meantime, recruiting of skilled labor for war production will be subject to federal regulations now being prepared.

This drastic change in the nation's labor program has been found necessary in order to protect the employer and the employed, to conserve the labor supply of the communities and to cut down unnecessary and expensive labor turn-over (which, in some cases, is as high as 100% a week), and to increase the production of essentials.

In each community there is being formed a local community labor board, consisting of a representative of the United States Employment Service, a representative of employers and a representative of the employed. This board will have jurisdiction over recruiting and distributing labor in its locality. Labor will not be removed by the Service from one state to another without the approval of the United States Employment Service at Washington. Every effort will be made to discourage any movements from community to community or state to state by any other service.

This is probably the most drastic action that the government has taken since putting the National Army draft into effect. The absolute necessity for this program can be seen when it is realized that in Pittsburgh, for instance, there are advertisements calling for men to go to Detroit; while in Detroit's street cars there are posters asking men to go to Pittsburgh. This same condition is apparent all over the United States and in the consequent shifting of labor a great part of our war effort is dissipated.

Medical Societies

BOULDER COUNTY.

The Boulder County Medical Society met in regular session July 11, 1918, at the Boulderado Hotel.

Those present were Drs. LaRue, Greene, Hetherington, Poley, Reed, Spencer, Cattermole and

Zener. Visitors were Dr. M. B. Sterling, Dr. L. H. Wolfren and Mr. Cole.

Dr. Mary Zener and Dr. W. M. Shultz of Nederland were elected to membership in the society, the latter by transfer. A vacancy having been caused by the removal of Dr. Swartz, who was acting as secretary and treasurer of the society, Dr. C. W. Poley was elected to fill the unexpired term.

In the report of clinical cases, Dr. Greene reported a case of delayed union in fracture of the arm, of marked interest. Dr. Poley gave the history of a case of perforation of a gastric ulcer in which operative interference was successful and an excellent recovery obtained. Dr. Spencer reported a case of Luby's throat and larynx. There was much interest manifested in the discussion of the various cases.

The secretary was instructed to make note and form an honor roll of the various members of the society who are in war service in any branch.

E. B. QUEAL,
Secretary Pro Tem.

Book Reviews

A Surgeon in Arms. By Captain R. J. Manion, M.C., of the Canadian Army Medical Corps. D. Appleton and Company, New York and London, 1918. Price, \$1.50 net.

This is a live book about the war as seen by a surgeon captain at the front. Captain R. J. Manion is a capital writer in popular vein, a keen observer, and a witty anecdotist whose supply of material seems to be unlimited. His style of writing is just as racy and entertaining as the best of its kind that comes from non-medical writers who have actually been engaged in the terrific European struggle; and it is more elegant than most of theirs. He often tempts us to laughter but occasionally to tears; sometimes to both almost in the same breath, as in the close of the chapter relating to Kelly, his "batman" or personal servant. "Where have you been hit, Kelly?" I demanded anxiously, for his face was pale. "Do ye mane, sor, anatomically, or jayographically?" "Ye know, cap'n, Oi always did respect the cross, in the abshttract, of course, since Oi knelt at the knees of me poor ould mother, rest her soul; but Oi niver had any great desire to look up at one of thim little wooden crosses through six fate of earth."

"A Surgeon in Arms" is arranged in twenty-five chapters, each of which is complete in itself, and deals either with some special character or group of characters, as in the chapter relating to Kelly or that dealing with staff officers; with some related group of episodes, as in the chapter on "Life in the Trenches", "Over the Top", and "Overland", the last of which demonstrates the propensity of Tommy to take any amount of risk above ground rather than increase his task by traveling circuitously and muddily through the trenches; or such more general topics as Paris during the war, life on a transport, or the language of the line.

It is impossible to give an adequate idea of this book without quoting word for word from much of the material it contains. Among the innumerable publications which have already accumulated in regard to the war, it is by no means the least qualified to interest, instruct, and amuse.

White and Martin's Genito-Urinary Surgery and Venereal Diseases. By Edward Martin, A.M., M.D., F.A.C.S., John Rhea Barton, Professor of Surgery, University of Pennsylvania, Benjamin A. Thomas, A.M., M.D., F.A.C.S., Professor of Genito-Urinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine, Instructor in Surgery, University of Pennsylvania, and Stirling W. Moorhead, M.D., F.A.C.S., Assistant Surgeon to the Howard Hospital, Philadelphia, Pennsylvania. Published by J. B. Lippincott Company, 1917. Price \$7.00.

White and Martin's Genito-Urinary Surgery needs no introduction to the medical world, having been for years the authority on this subject in America. The previous edition of this work, as will be well remembered, was a consolation to the busy surgeon forced to look up some subject in this field hastily, because it was so well arranged and so well indexed, and because no portion of the field had been omitted. After the appearance of that work, however, genito-urinary surgery made such wonderful advance that, if the work were to live, a new edition was imperative. White having practically retired, it was but fitting that Thomas with the able assistance of Moorhead should collaborate with Martin in bringing this work up to date. Descriptions of functional tests of the kidney, cystoscopy, urethroscopy, operative work through the cystoscope and operative work on the bladder, prostate, ureters, and kidney have all been changed to meet the views of the day. Serology, vaccine therapy, and the bacteriology of venereal diseases and genito-urinary surgery have been well brought up to date. Syphilis, with the advances made since the discovery of the organism which causes this disease, is well treated, staining methods for the spirochete being given, the Wassermann reaction being described and its proper value being well pointed out. There probably is no more thorough work on this entire field, in the English or any other language, existent today.

W. M. S.

The Third Great Plague. By John H. Stokes, A.B., M.D., Chief of the Section of Dermatology and Syphilology, The Mayo Clinic, Rochester, Minnesota; Assistant Professor of Medicine, the Mayo Foundation Graduate School of the University of Minnesota. W. B. Saunders Company, 1917. Cloth, \$1.50.

This work, intended for the lay reader, is well worth the attention of the profession at large. The author recognizes that, though it may be an easy task for the authorities to forbid the public at large to contract syphilis, the education of the public is the only means to eradicate this world-scourge. While this is not by any manner of means a new idea, great credit must be given him not only for putting his own shoulder to the wheel of progress and education, but for presenting the subject of syphilis, its prevention, course and cure as well as the original cause in a manner and fashion that can be well digested by an immense percentage of the lay public. To present this subject in such fashion, still retaining medical and scientific accuracy, is not an easy task, therefore much commendation is due the author. This book should find a place in all private, public and medical libraries, and in every physician's waiting room.

W. M. S.

Medical Service at the Front. By Lieut. Col. John McCombe, C.A.M.C., and Captain A. F. Menzies, C.A.M.C. Lea & Febiger: Philadelphia and New York. 1918. Price, \$1.25.

This little volume has a foreword by Surgeon General Fotheringham of Canada. It aims to give the medical man going into the service some idea of the formation and organization of the medical department near the front line. It contains chapters on the arrangement of the division in the front line, the regimental medical officer, the field ambulance in peace and in battle, the selection of field ambulance positions, the assistant director of medical service, the corps, the medical arrangement for cavalry, and the casualty clearing station. It is well illustrated and is written in a clearly understandable style. It will be very helpful to those medical men who contemplate going to the front, inasmuch as most medical men going into the service at this time have had no military training and are quite unfamiliar with the necessary arrangements for ambulance service, dressing stations, first line hospitals, etc.

The book has a soft back, can easily be carried in the pocket, the print is large and legible though the margins are narrow. The paper is good.

H. G. W.

Principles of Surgical Nursing. A Guide to Modern Surgical Technic. By Frederick C. Warnshuis, M.D., F.A.C.S., Visiting Surgeon, Butterworth Hospital, Grand Rapids, Michigan, Chief Surgeon, Pere Marquette Railway. Octavo of 277 pages with 255 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$2.50 net.

This is a delightfully clear, concise and splendidly illustrated volume on surgical nursing, methods and technic.

The section covering the preparation and equipment for surgical operations in the private home, and the conduct of the nurse under such circumstances, is exhaustive. Many hospitals and most nurses could apply, greatly to their betterment, the principles here enunciated. The chapter on post-operative emergencies discusses these conditions thoroughly and is a splendid guide for the surgical nurse.

The great number and excellence of the illustrations make the book a most valuable one as a guide for the nurse as well as for the teaching of the principles of modern surgical nursing.

C. F. H.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles by Leading Members of the Medical Profession Throughout the World. Edited by H. R. M. Landis, M.D., Philadelphia, U. S. A., with other Collaborators. Volume I. Twenty-eighth Series, 1918. J. B. Lippincott Company, Philadelphia. Price, \$2.50.

This volume of the Clinics is divided into several parts. The first part is composed of clinics and is followed by original articles on medicine, neurology, public health, surgery, and then by a general review of medicine for the year 1917 by Frank A. Craig, M.D., and P. G. Skillern, Jr., M.D.

The clinics begin with a clinical lecture by Louis Faugers Bishop, A. M., M.D., New York City, in which he attributes many of the cases of asthma and cardiovascular conditions to food poisoning. This is followed by a clinic by John B. Hawes, 2nd, M.D., of Boston, on the treat-

ment of non-pulmonary tuberculosis, in which he discusses the surgical, tuberculin and general treatment. The clinics which follow on the various subjects are a gynecological clinic by Dr. John Osborn Polak; one on sterility by Victor D. Lespinasse, M.D.; another on bilateral hematuria, tuberculosis of the epididymus, epididymectomy and enlarged prostate, by Herman L. Kretschmer; and a surgical clinic by Frank H. Lahey on kidney calculus and ureteral calculus.

After the clinics, there is a lecture by Charles Greene Cumston, B.S., M.D., of Geneva, Switzerland, on "Injuries to the Cranium and Brain in Warfare." He emphasizes the necessity of an operation as soon as circumstances will permit in case of penetrating wounds of the skull.

The original articles following are by well known men, as Philip King Brown, M.D., of San Francisco; Elmer H. Funk, M.D., of Philadelphia; F. Parkes Weber, M.A., M.D., F.R.C.P., of London; John P. H. Murphy, M.D., of Washington. D. C.; J. D. Steinhardt, M.D.; W. Estell Lee, M.D., Philadelphia; and Henri Bigo, M.D., of Caudry, France. These men have very interesting articles, the various subjects being joint affections, spontaneous hernia of the lung, some pathological conditions of the nails, the criminal mind, the therapeutic use of occupation in the treatment of the insane, the teaching of sex hygiene, and the treatment of infected wounds, of burns, shell and gunshot wounds.

The entire book covers many things of especial interest and much that is new in medicine. It makes an interesting and instructive work which is a valuable addition to medical literature.

M. R. S.

An International System of Ophthalmic Practice. Edited by Walter L. Pyle, A.M., M.D., Philadelphia, Member of the American Ophthalmological Society. **Medical Ophthalmology.** By Arnold Knapp, M.D., Professor of Ophthalmology, Columbia University, Executive Surgeon Herman Knapp Memorial Eye Hospital. With thirty-two illustrations. Philadelphia: P. Blakiston's Son & Co.

This work, by the eminent son of one of the most eminent American ophthalmologists of the preceding generation, is a painstaking and praiseworthy attempt to state, both for the eye specialist and the general practitioner, the relations of ophthalmology with other branches of medicine and surgery. It is in large measure a very careful review, covering almost five hundred pages, of the home and foreign literature on the various topics dealt with. The main divisions of the book are: 1. Anatomy and physiology; 2. Diseases of the nervous system; 3. Diseases of glands with internal secretion; 4. Poisons; 5. Infectious diseases; 6. Diseases of the circulation; 7. Diseases of the respiratory tract; 8. Diseases of the digestive tract; 9. Anemia; 10. Diseases of the kidneys; 11. Diabetes; 12. Diseases of the female generative organs; 13. Osseous system; 14. Skin diseases; 15. Hereditary eye diseases. The book is fairly well illustrated, principally with anatomical cuts. Turning to the index of authors' names referred to in the text, it is of striking interest at the present time to find that the vast majority of all the references are to the writings of German physicians. This is no doubt due to the fact that German literature on the subject has been more voluminous than that of other countries. Free use has also been made of French and English sources. The volume can be recommended as a useful work of reference.



MAJOR F. H. McNAUGHT, M. C.
President of the Colorado State Medical Society, 1918-1919

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TO OUR ARMY MEMBERS.

The following resolution was adopted at the forty-eighth annual meeting of the Colorado State Medical Society:

THE COLORADO STATE MEDICAL SOCIETY, ASSEMBLED AT ESTES PARK IN ITS FORTY-EIGHTH ANNUAL MEETING, HEREBY EXPRESSES ITS ADMIRATION OF THE SPIRIT OF PATRIOTIC SELF-SACRIFICE WHICH HAS PROMPTED SUCH A LARGE PERCENTAGE OF ITS MEMBERS TO LEAVE THEIR HOMES AND PRACTICES IN ORDER TO TAKE PART IN THE WORLD STRUGGLE FOR FREEDOM AND DEMOCRACY; AND EXTENDS TO THE ABSENT MEMBERS ITS HEARTY GOOD WISHES FOR A SAFE AND SPEEDY RETURN TO CIVIL LIFE.

THE ESTES PARK MEETING.

Notwithstanding war conditions, the annual meeting of the Colorado State Medical Society in Estes Park on September 9, 10 and 11 was a gratifying success. A full report of the proceedings of the House of Delegates will be published in the October issue of Colorado Medicine. The Society elected as its President for the coming year Major F. H. McNaught, who was fortunately on furlough and so was able to attend the meeting. The First Vice-President is Dr. J. J. Pattee of Pueblo. The next meeting of the Society will be held in Denver.

THE NEW PRESIDENT.

Major F. H. McNaught, the new President of the Colorado State Medical Society, graduated from the medical department of Columbia University in 1878. He practiced for a number of years in New York City, and came to Denver about twenty-five years ago, being at first associated with Dr. F. Bancroft. He has been chief surgeon of the Colorado and Southern Railroad for twenty years, and at the time of entering the army was president of the staff of St. Joseph's Hospital, was on the active surgical staff of St. Luke's and the Children's Hospitals in Denver, and was consultant on the surgical staff at the Denver City and County Hospital. Major McNaught has also been President of the Denver Clinical and Pathological Society, and has been active for many years in medical teaching. He was called to surgical service in the aviation branch of the United States Army in December, 1917, reporting to Kelly Field, Texas. After a month of service as assistant to the Surgeon in charge of that camp, Major McNaught was ordered to the hospital at Camp Bowie, Fort Worth, Texas, as chief of the surgical service. After four months activity in this capacity, he was ordered to the hospital at Plattsburg Barracks, New York, where he is chief of the surgical staff.

THE WAR AND MEDICAL PROGRESS.

The medical literature of the last four years shows the effect of the war in many ways. New books are fewer and relate chiefly to war interests. The irregular appearance of journals, the decrease in their

size, the elimination of some, the combination of others, are changes that reflect disturbed professional activities. Then the articles on war surgery, and the accounts of war injuries, war sanitation and military requirements for service occupy an unusually large share of space in the general medical journals; and the periodicals devoted to each specialty in medicine and surgery show the same perturbations arising from the devotion of medical talent and energies to meet the emergencies created by war.

But with all this, there are evidences of great and epoch-making gains in our knowledge of many conditions. Neurology shows very great advances in the definiteness of our ideas of cerebral localization; and new light on such general functional impairments of the nervous system as those produced by shell shock. The possibility of serious organic change in the nervous system due to injury transmitted entirely through the air, or making its way through uninjured bony or soft tissues, has been proven in the case of the retina.

The "War Atlas of Ophthalmology" by Lagrange records many cases of such retinal injuries, showing that swelling, edema, and hemorrhage in the retina may occur from force reaching the body entirely through vibrations occurring in the air, and transmitted to the posterior pole of the eye through tissues that themselves remain undamaged.

Laceration of the choroid from force transmitted by tissues that escape damage is especially liable to occur near the posterior pole of the eye, and is often followed by inflammatory exudate that becomes organized into permanent scar tissue.

We must assume that the central nervous system and its vascular surrounding membrane are in similar manner liable to serious organic lesions, that arise from force transmitted through undamaged tissues. Such lesions, like those we can see in the eyeball, may be permanent or transient. The field of vision may be wholly lost by damage to the visual centers, and later completely recovered; and the regular orderly process of recovery demonstrates that the lesion has been one producing organic change, of

graded severity in different parts of the visual cortex. This is something entirely different from "hysteria", "psychic blindness", or malingering.

In the course of the war new medical and surgical problems, of wide interest outside of war conditions, have arisen for study and solution. "Trench nephritis" may be made to throw a little light on nephritis in general. "Trench fever" takes its place as a distinct clinical entity, transmitted by the louse; although its bacterial cause has not yet been recognized. "Trench foot" has been the subject of investigations that help us to understand the nature of frost bite and of vascular lesions in general.

Although not begun at the seat of military operations, but by a group of talented investigators in Japan, the study of infective jaundice, the recognition of the spirochete causing it, the distribution of this organism, its common host the rat, and its mode of invasion, have been made more interesting and fruitful by the epidemics arising in the armies.

The study of microorganisms has in many instances risen to great military importance, and has been pushed with corresponding energy and support. The intermediate hosts of the *Bilharzia* have been discovered, and the means for rendering infected water safe as regards this menace to health and life. The prevention of tetanus and typhoid fever has been carried to practical completeness on an enormous scale. Dysentery has been controlled and treated with greater success. Cerebro-spinal fever has been studied to good purpose; particularly in the direction of the variations in the different strains of the meningococcus, practical serum treatment, and the discovery of the more dangerous carriers. Typhus fever has been brought under specific control.

The phenomena of gas poisoning belong chiefly to internal medicine, whether they be those of damage to the respiratory apparatus and related structures, or the more profound tissue changes in the nervous system. The scientific study of the physiologic changes associated with aviation, the modifications of oxygenation and circulation, their effects on different functions and the

variations in respiratory adaptability in different individuals, is of the highest interest and will be in future of great practical utility.

In military surgery the activity has been great and wide spread. Wound treatment has been carried on and studied under conditions varying from those of winter in northern Russia to the tropical deserts of Egypt and Mesopotamia; or from the operating room far underground in the trenches to the best equipped metropolitan hospital. Old and new methods have been compared on series of cases unprecedented in numbers.

Enormous advances have been possible in the methods of handling and transporting the wounded. Plastic and reconstructive surgery have assumed an importance heretofore undreamed of; and suggestive of new possibilities in the replacement and readjustment of parts. Old and new procedures have been systematized and brought to the attention of the mass of surgeons as never before.

The grappling with new problems, after loss of aptitude for study, the return of older men to active practice and teaching, the deferring of expected relief from the pressure of professional duties, the dislocation of life plans, the physical hardship and danger of the battle line, have all fallen more generally upon the medical profession than on the mass of the people at large. Some of our most promising younger men, and men of ripened power and demonstrated ability, have been cut off in the midst of their professional careers. The essential losses of war have fallen heavily upon us.

But against these losses we must set real gains. Habits of study have been renewed or newly acquired, professional abilities have been developed and horizons broadened. New methods and interests have been brought into our professional lives, and rich memories of men and achievements have been gathered by the individual. More important have been the essential gains in our knowledge of disease and injury, and in our power to control or modify them. These are parts in the permanent gains of medicine which will continue useful and fruitful

as long as our civilization shall endure. Most important, perhaps, are the gains in the ideals of health and development which are dawning on the people of civilized countries, and which can be rendered definite and enforced by the medical profession, until they are reckoned among the great health assets of the race.

E. J.

THE BACTERICIDAL LAUNDRY.

In view of the rapidly increasing employment of what may be called the common washtub in the form of the public laundry, it becomes important to consider the fate of bacteria sent to this institution with the weekly wash.

Some years ago Wile declared that "laundering as practiced in the better class of power laundries appears to be an efficient hygienic method of promoting cleanliness, without danger to patrons and with comparative safety for the employee".

It has been brought out that the real sterilizing factors in the washing process are heat; soap and weak alkalies, even at temperatures as low as 120 degrees F.; and hypochlorite solutions when used.

The effectiveness in the laundry of hypochlorite, which may possibly be the "strong chemical" to which men are apt to attribute the destruction of their linen collars, is probably very great as a bactericide; since the percentage reduction of various microorganisms by fifteen minutes contact with one part of available chlorine in ten million parts of water was found by Lederer and Bachmann to be 99.98 per cent, and with five parts of available chlorine in ten million parts of water 100 per cent; while for effective and comparatively harmless bleaching in laundry practice, we are told that a concentration of available chlorine of one thousand times that last mentioned is required.

The use of hypochlorite solutions of the higher temperatures is of course limited to certain fabrics. Woolens and some fabrics containing fugitive dyes cannot be washed in baths whose temperature exceeds 120 degrees F., and these same fabrics must frequently be dried at room temperatures. The

solution of the sanitary problem involved in the washing of the vast number of blankets for hotel, Pullman and steamship service depends largely on the bactericidal value of soap.

Rodet observed that strips of linen dipped in cultures of cholera, dysentery, and colon bacilli, and then coated with egg albumen, were sterilized at the end of one hour's immersion in a two and one-half per cent concentration of anhydrous soap at a temperature of 45 degrees C. (113 F.). In all cases, concentrations as low as three parts in ten thousand inhibited the growth of bacterial cultures in beef broth.

To determine the efficiency of soap solutions as employed in laundering woollens, Elledge and McBride (*American Journal of Public Health*, 1918, page 494) carried out a series of experiments with *Bacillus subtilis*, which is highly resistant to heat and germicides, and also with *Micrococcus pyogenes aureus* and *Bacillus coli*. It was found that satisfactory indications of the number of organisms present were not obtained by the infusion method, but that more reliable results were obtained by plating portions of cloth in agar. Soap solutions at a temperature of 140 degrees F. proved to have a real bactericidal value. The churning of the water in the washing machine reduced *Bacillus subtilis* 47 per cent without soap, and 64 per cent when subjected to the action of a soap solution of one part of anhydrous soap in 1,450 parts of water. *Pyogenes aureus* was reduced to 62.7 per cent in 15 minutes, 79.4 per cent in 30 minutes without soap; and when soap was used, the reduction amounted to 96.1 per cent after an exposure of 15 minutes, and 97.3 per cent after 30 minutes. *Bacillus coli* was reduced 59.5 per cent in 15 minutes and 76 per cent in 30 minutes without soap; while with one part of soap to 1,450 parts of water the reduction was 95.8 per cent in 15 minutes and 97.9 per cent in 30 minutes. With only one-half as much soap, the reduction of the bacterial count was 78 per cent in 15 minutes and 87.8 per cent in 30 minutes.

Thus, in the case of all garments that are finished by ironing or drying at high temperatures, the fabrics are rendered abso-

lutely sterile; while, in the case of those not so treated, washing with soap produces bactericidal results comparable to those obtained by pasteurization.

Original Articles

CONSIDERATION OF NON-TUBERCULOUS CHEST CONDITIONS DIAGNOSED AS TUBERCULOSIS; ALSO SOME UNUSUAL CASES OF PULMONARY TUBERCULOSIS.*

J. B. CROUCH, M.D., M. W. A. SANATORIUM, WOODMEN, COLO.

It is becoming more apparent to men who are doing tuberculous work that there are many conditions which simulate tuberculosis, and which were formerly diagnosed as such, but which on careful examination are proved to be due to other causes. An examination of the records of patients discharged from the Modern Woodmen of America Sanatorium during the last two years reveals the fact that in eleven and one-half percent of these cases we were unable to discover active pulmonary tuberculosis. These cases may be divided into several different groups.

First, there are those who show no evidence of organic disease. These are by far the most numerous. In these cases the diagnosis of tuberculosis was made for various reasons; possibly from a positive reaction to one of the various tuberculin tests; possibly from family history; and very often because of the physician's zealous desire to diagnose tuberculosis in its incipency.

Second, we have the various infections other than tuberculous. Under this head we may include the various non-tuberculous infections of the lung, such as chronic bronchitis, pulmonary abscess and gangrene, bronchiectasis, non-tuberculous empyema and infections with the various fungi, such as streptothricosis and blastomycosis.

Third, there are cases showing pathological changes which are due to causes other

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

than lung infections. We may include tumors of the lung and mediastinum and aneurysm of the aorta.

Fourth, there is a type of case which is often sent to the sanatorium with diagnosis of tuberculosis, where the diagnosis has been made from some local condition in the larynx, without regard to any changes in the lungs themselves. These cases include the various growths in the larynx, both benign and malignant.

Instead of showing these cases, I am going to show the lantern slides of the roentgenograms of some of the various pulmonary conditions which had been diagnosed as tuberculosis, but which we have proved to be of some other origin. We will first consider chronic non-tuberculous lung infections.

1. The first case is that of C. M. P., age forty-eight years, farmer. He entered the sanatorium November 13, 1916. This case had a well marked local area of dullness with moist râles over the middle of the left lung. We were never able to demonstrate tubercle bacilli in this case. He had a well marked pyorrhea and the organism from the teeth was similar to the organism that was in the sputum, possibly an *aspergillus*. He was treated for pyorrhea while he was a patient at the sanatorium, and following the treatment made marked improvement; his sputum practically disappeared, although the area of dullness and râles remained up to the time of his discharge, April 10, 1917. The chief point of interest in this case is the finding of the organism both in the sputum and the teeth; also the marked improvement made when treatment for pyorrhea was instituted.

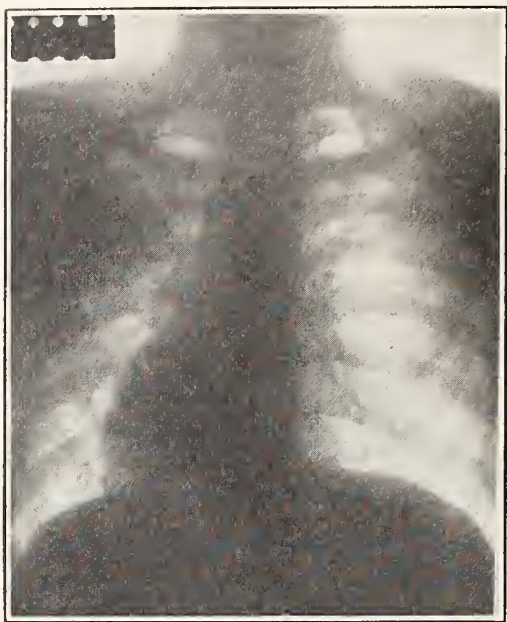
2. J. S. E., age forty-two years; railroad section foreman; entered the sanatorium April 1, 1917; family history negative. Underwent a surgical operation February, 1916, for hemorrhoids; took an ether anesthetic. Following this operation, in March, he took cold, which developed into pneumonia, and he has not been well since that time. Present trouble followed pneumonia, with slight fever, cough, expectoration of pus, and loss of weight. Symptoms continued and in June, 1916, he returned to the

hospital and remained until November, 1916, when he returned home, somewhat improved in health. In November, 1916, while still at the hospital, a small amount of pus was aspirated; he was indefinite in his statement as to the amount aspirated. At the time he was admitted to the sanatorium there was a marked dullness over the lower part of the right lung. He expectorated about twenty-four ounces of purulent sputum, of slightly offensive odor, in which we were unable at any time to demonstrate tubercle bacilli. When placed in a reclining position, with head down, he expectorated in a few minutes a very large amount of offensive sputum; and pectoriloquy and amphoric breathing were heard in the base, which had formerly been dull in the upright position.

I first attempted to induce a pneumothorax in this patient, and later attempted on six different occasions to aspirate him, but was unsuccessful. He was treated with posture, and there was some improvement in his condition. He left the sanatorium June 17, 1917, slightly improved. I believed this would be a good case for surgical treatment, as the pleura seemed to be very adherent, and drainage could have been instituted without a collapse of the lung. Whether this was a case of abscess of the lung itself, or an empyema that had broken into the lung, I am unable to state. I believe, however, it was a case of pulmonary abscess.

3. W. F. D., age thirty years; farmer; entered the sanatorium May 5, 1917; family history negative. This patient had so-called pneumonia in November, 1916. At this time the patient started to cough and expectorated large amounts of sputum and bloody pus. After that he improved, and then the cough returned. When he entered the sanatorium he expectorated four ounces of purulent pus, which at times was blood-tinged. He had a distinct hemorrhage in November, 1916, and another in February, 1917, and since, on several occasions, his sputum has been bloody at times, and he has lost twenty-seven pounds in weight. Examination of his chest reveals an area of dullness and râles in the upper part of the

left lung. The diagnosis of tuberculosis was made, with a favorable prognosis. However, we were never able to demonstrate tu-



Case No. 3. Abscess in upper lobe of left lung.

bercle bacilli in his sputum and the roentgenogram showed a dull area fairly well circumscribed over the middle of the left lung. On account of the localized nature of the dullness and the absence of tubercle bacilli and the character of his sputum, which was distinctly purulent, a pulmonary abscess was later diagnosed. He was placed on iodine treatment and pneumothorax was created on August 15, 1917. This pneumothorax can be seen in the slide.

4. O. I., age thirty-six years; farmer; entered the sanatorium May 10, 1917. He was accompanied to the sanatorium, on admission, by his physician on account of his serious illness. He gave a history of an acute illness with pneumonia occurring nine weeks previous to his admission from which he had never entirely recovered. The physical examination revealed a dullness well marked and localized on the right side, but no râles; there were diminished breath sounds over the dull area. An abscess or an unresolved pneumonia was diagnosed at this time. He improved rapidly under the rest treatment, but later on had much more cough than on admission, and an examination at this time

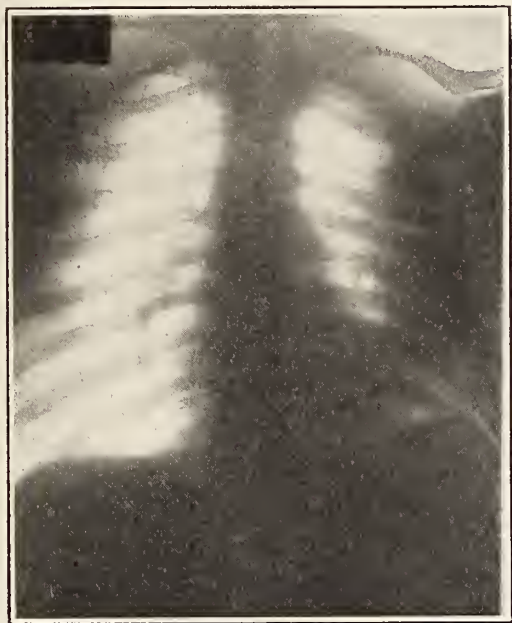
revealed a considerable amount of moisture over the dull area; breath sounds were still very much diminished. He was discharged September 11, 1917, at which time he had gained thirty-six pounds. The dull area had almost entirely cleared up and there was no moisture. We considered his condition such that he could be safely discharged from the sanatorium. I do not believe that a pulmonary tuberculosis would clear up as rapidly as this has done, and we were never able to demonstrate tubercle bacilli in his sputum. Whether this was a case of unresolved pneumonia or an abscess following pneumonia, I am unable to say.

5. E. M. P., age twenty-seven years; laborer and farmer; entered the sanatorium July 13, 1917. The patient was in good health until February, 1917, when he had a case of so-called la grippe and pleurisy. He recovered from this condition, but became sick again in May, 1917. When he entered the sanatorium he had no cough and no expectoration, and claimed that he had not coughed since February. He showed a well marked dullness in the left base, with a slight dullness in the left apex. There were pleural râles in the left base and a few slight râles on coughing in the apex of this side. The breath sounds and vocal reso-



Case No. 5. Large abscess in left lung before rupture.

nance were distinctly diminished over the entire left side, being almost absent in the base. A diagnosis of tuberculosis and pleu-



Case No. 5. Abscess in left lung after spontaneous rupture into a bronchus.

ris with effusion was made on his admission. We attempted to aspirate him a few days after his admission with no successful result. September 9, 1917, something apparently broke in his side, and he expectorated a large amount of thin purulent sputum, which showed a pure culture of streptococci. Following this apparent rupture of his abscess, I again attempted to aspirate him, with no success. There was distinct resistance to the needle at this time, as if it were being pushed through cartilage. The slides show a well marked localized dullness, causing a suspicion of a tumor mass; I believe, though, this case is one of abscess rather than tumor on account of the large amount of purulent sputum. At the time of the rupture of this mass the patient ran a high fever and was quite ill; he has since improved, however, but is still expectorating about six or eight ounces of sputum daily. This is distinctly purulent, but not offensive.

6. R. A. D., age twenty-five years; millwright; a resident of Mississippi. This patient entered the sanatorium May 25, 1917.

He gave a history of dysentery with chills and fever, which lasted for three months, four years previous to his admission to the sanatorium. Since that time he has had occasional spells of dysentery with chills and fever. He had not been in good health since August, 1916, when he had a tired feeling, with chills and fever; had been quite ill since January, 1917. On March 5, 1917, his chest was drained for empyema; he took ether at this time. In May, 1917, after the drainage had been allowed to close, he was aspirated and a quantity of pus removed before he entered the sanatorium. When he was admitted to the sanatorium on May 25, he was in a moribund condition. He had well marked dysentery at this time; his right chest was entirely flat to the third dorsal spine, and to the clavicle anteriorly; above this flat area the chest was hyperresonant and there was a succussion splash. Pyo-pneumothorax was diagnosed at this time. A drainage was instituted, but the patient died June 1, 1917. An autopsy revealed amebic dysentery, multiple ulcers being found in the large intestine, and there was a large solitary liver abscess which had perforated into the right lung, causing gangrene in this lung. There was no evidence of pulmonary tuberculosis in this case.

The next cases do not show local abscess formation, but rather a bronchiectatic condition.

7. J. F. McC., age thirty-one years; farmer; admitted to the sanatorium June 24, 1916; family history negative. Health was good until two years prior to his coming to the sanatorium when his trouble followed an attack of la grippe. He had loss of weight, loss of appetite, fever, and chilly sensation. Later there were languor, cough and expectoration, and night sweats. This man had formerly been a patient at the sanatorium from August 24, 1915, to October 14, 1915, and at this time his trouble was diagnosed as lung abscess. He left the sanatorium to live in Colorado. When he entered the sanatorium the second time he had a very severe cough, especially marked on change of position, and expectorated about eight ounces of thin, purulent sputum, which was extremely offensive. This sputum sep-

arated into three layers on standing, and was always negative for tubercle bacilli. A guinea pig injected with the sputum died of septicemia. The patient was septic.

Physical examination revealed marked dullness in the right base. The left base was dull, but not so dull as the right. There were coarse, bubbling râles over both bases, more marked over the right, with pectoriloquy on the right at the level of the eighth dorsal spine. The roentgenogram showed marked fan-shaped shadows with dilated bronchi to the bases, more marked on the right. A diagnosis of bronchiectasis was made. Here again, although there was a marked involvement of the lungs, the trouble was almost entirely of the basal type. Also, the character of the sputum was different from that of tuberculosis. This patient left the sanatorium against our advice, September 2, 1916, without having made any improvement.

8. J. L. McC., age thirty-five years; farmer; admitted to the sanatorium October 2, 1916; family history negative. Patient had always felt well until July, 1915, at which time his trouble began with loss of weight, loss of appetite, languor, cough, fever and pleuritic pains. He had a hemorrhage in June, 1916. When he entered the sanato-

rium he had a marked cough, which was especially marked in the morning and on change of posture. He expectorated eight ounces of purulent sputum daily, which had an extremely offensive odor and was at all times negative for tubercle bacilli. The physical findings showed well-marked dullness at about the sixth, seventh, eighth and ninth dorsal spines, both right and left. Over this area there were moist râles. The roentgenogram showed marked infiltration of both lungs with large dilated bronchi. This was more marked toward the bases than the apices. The patient's temperature ranged from ninety-nine to one hundred and one daily, his pulse from seventy-two to one hundred. He was extremely septic. He left the sanatorium November 6, 1916, unimproved. Diagnosis: bronchiectasis. This diagnosis was made from the location of the trouble, it being basal in type, from the character of the sputum, and from the dilated bronchi as shown by the roentgenogram.

9. W. W. B., age thirty-eight years; farmer; entered the sanatorium September 30, 1916; family history negative. His present trouble began with pleurisy September, 1914. He had spit blood one year previously to his admission to the sanatorium; expectorated about eight ounces of muco-puru-



Case No. 8. Bronchiectasis. Marked dilatation of bronchi: fan-shaped shadows.



Case No. 9. Bronchiectasis. Marked dilatation of bronchi.

lent sputum, which had been negative on six examinations previous to his admission; was somewhat hoarse when admitted, and had very marked and constant dyspnea; had lost weight. Physical examination revealed well-marked dullness toward the bases of both lungs, more marked in the left than the right. There were only a few fine râles on the left side, on coughing, in spite of the well-marked dullness and the large amount of purulent sputum.

This patient expectorated a large amount of sputum when placed with his head downward. We were never able to demonstrate tubercle bacilli in his sputum. He remained very dyspneic during his stay at the sanatorium. During the first few months his physical condition improved somewhat, although there was very little change in his lung findings; however, just before his discharge from the sanatorium, March 17, 1917, he became quite ill, extremely dyspneic, and had rather high fever. We advised him to return home at once, which he did. He died April 14, 1917. The diagnosis in this case was bronchiectasis. The dilated bronchi, fan-shaped from hilus, show extremely well in the slide.

10. A. A. G., age thirty-seven years; had been a laborer in a grain elevator; admitted November 10, 1916. I will not go into details in this case, as the case has already been reported before the El Paso and the Denver meetings of the medical societies. I wish to state, however, that it is a case of blastomycosis of the lungs. The primary involvement probably began in the larynx, as we were unable to demonstrate any tuberculous lesions, either by physical examination or roentgenogram, on his admission to the sanatorium. The diagnosis was made in this case by our pathologist, Dr. E. D. Downing, from some sections taken from the epiglottis. On admission he showed a well-marked infiltration of the epiglottis, with negative lung findings; for this reason we suspected that he did not have tuberculosis. The different slides show the progress of the disease in the lungs. The disease also progressed rapidly in the larynx, in spite of the vigorous treatment both locally and internally with iodine. An emergency trach-

eotomy was performed on February 26, on account of the closure of the larynx. The patient left the sanatorium June 2, 1917, distinctly worse than he was on admission.

The next few slides are those of rather unusual tuberculosis. I merely show them to demonstrate how easy it is for one to be misled in the diagnosis of this disease without the assistance of the bacteriological evidence.

11. The first case is that of R. O. M., age twenty-two years; clerk in a store; entered the sanatorium August 24, 1916. His first trouble began in May, 1916; had a gradual onset with a so-called "typhoid"; had loss of weight, was tired, had some cough, expectoration and fever. The cough was worse in the morning and he expectorated about three ounces of purulent sputum daily. An examination revealed a very well-marked dullness in the left base, with coarse, moist râles over this area. There was also some dullness with râles on coughing in right apex. This patient was very weak and septic, having high fever and a rapid pulse. I was in doubt as to whether the diagnosis was a basal type of non-tuberculous infection or a tuberculosis most marked in the base. However, the bacteriological examination of the sputum showed tubercle bacilli. This patient remained at the sanatorium nine months and was discharged May 12, 1917, as quiescent. His improvement was remarkable for one showing as much involvement as in his case. Contrary to the usual opinion, I believe that tuberculosis at the base of the lung does fully as well as tuberculosis located in the apex.

12. D. W. S., age twenty-three years, telegraph operator; entered the sanatorium July 17, 1917; family history negative for tuberculosis; present trouble began acutely with hemorrhage May 30, 1917. On admission to the sanatorium he expectorated two ounces of muco-purulent sputum, which was negative for tubercle bacilli on two examinations previous to his admission. Physical examination showed well-marked dullness in base of right lung. There was slight dullness in both apices; medium moist râles on coughing were present in the right base; no râles could be detected in either apex. This

case I diagnosed as a non-tuberculous infection of the right base. However, four days after his admission tubercle bacilli were demonstrated in his sputum.

I believe this is a pure basal type of tuberculosis, and one that would easily mislead the diagnostician. This patient is still at the sanatorium and improving rapidly in health.

The next few cases are those of "miners' consumption" in which the induration of the lung is far in excess of any softening present.

13. C. W. S., age forty-three years; laborer, but had been a metal miner for two years; entered the sanatorium November 23, 1916. His family history was positive for tuberculosis, one sister having died of the disease when forty years of age. The present trouble began a year previous to his admission to the sanatorium. He had a well-marked morning cough, but he was raising no sputum from the lungs. The sputum was negative for tubercle bacilli. He had a well-marked and constant dyspnea, which is always present in these cases.

14. J. A. B., forty-one years of age; laborer and smelter worker; admitted to the sanatorium May 13, 1916. His family history was negative. The present trouble began with pleurisy a year and a half previous to his admission to the sanatorium. Following this pleurisy were loss of weight, fever, pleuritic pains, loss of appetite, and languor; he had a cough and was dyspneic on exertion; expectorated two ounces of purulent sputum. Physical examination revealed dullness in upper half of both lungs, with rather fine râles over the dull area. We were never able to demonstrate tubercle bacilli in this patient. He improved somewhat under rest treatment, but still showed dullness and râles on discharge, August 12, 1916.

15. W. J., age twenty-six years; cement worker; entered the sanatorium June 26, 1916. His present trouble began two and a half years previous to his admission, with gradual onset, with so-called "typhoid" fever. Physical examination revealed dullness and râles over the entire left lung, and one-half of the right lung. The physical

findings in this case were of advanced pulmonary tuberculosis. The object in showing this picture is to show some calcareous



Case No. 15. Cement worker. Showing small nodules in both lungs, probably deposits of cement.

nodules deposited entirely throughout both lungs. We believe these nodules to be deposits of cement.

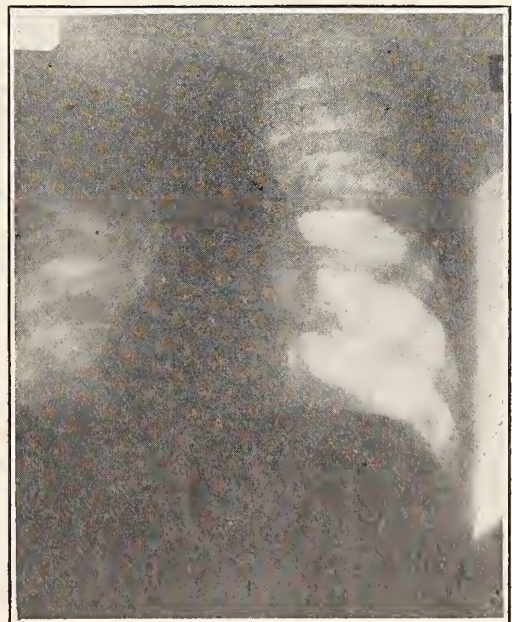
The next cases are those of pathological conditions in the chest, not due to infections of the lungs.

16. H. B. A., age forty-six years; farmer; admitted to the sanatorium November 18, 1915. The patient's family history showed that his wife had had lung trouble eight years before, and for this reason the family moved into western Canada. His personal history was negative except for the fact that he had had attacks of pleurisy during the past fifteen years. His trouble began with an acute onset, following an attack of la grippe in August, 1915. On admission he had a marked cough in the morning when arising and on change of position. He expectorated about twenty-four ounces of mucoid sputum which contained no purulent material. He had lost sixteen pounds, had a slight fever ranging from 99.4° to 100° daily, and his pulse ranged from eighty-two to one hundred beats per minute. He was

very anemic, the nails were curved, there was a marked restriction of the chest movements and a bulging of the chest on the right side. Physical examination showed flatness in the right base with absence of breath sounds and vocal resonance diminished. Above this area of flatness was a band of tympany. The apex of this lung was dull. Coarse moist râles were heard over this entire side, excepting in the flat area in the base. The left lung showed only a slight dullness in the apex with a few fine râles posteriorly at the level of the fifth and sixth dorsal spines. A diagnosis of effusion in the right base was made. Thirty cubic centimeters of thick gelatinous fluid were withdrawn November 19, 1915. This fluid was similar to the expectoration. A guinea pig injected and killed in six weeks showed no lesions of tuberculosis. December 28, 1915, twelve hundred cubic centimeters of fluid were withdrawn and the fluid replaced by air. Repeated examinations of the sputum were negative for tubercle bacilli. During the first few weeks of his stay at the sanatorium this patient gained slightly in weight and strength; however, after this there was a gradual loss in both weight and strength. The left side became dull and showed many râles. March 7, 1916, he had marked dyspnea and he died March 8. An autopsy disclosed a tumor of the right lung about the size of a large orange. The right pleural cavity was empty, except for a small amount of fluid. The left lung showed metastatic growths throughout. A pathological examination of the tumor mass revealed carcinoma (probably primary) in the bronchus. No diagnosis of tuberculosis was made in this case during his stay at the sanatorium. In fact, no definite diagnosis was made until the autopsy. A tumor of the lung, however, was suspected.

17. J. S. S., age forty-four years; farm laborer; admitted to the sanatorium February 19, 1917; family history negative for tuberculosis. The patient claimed he had pleurisy in February, 1916; otherwise had always been healthy until July, 1916, when his trouble began with cough. Following this there was hoarseness and later an en-

tire loss of the voice. He had a hemorrhage of one pint December 12, 1916, and claimed to have had four hemorrhages before entering the sanatorium, the last one occurring on the train the same day he entered the sanatorium as a patient. He said that all these hemorrhages were large. He had a marked, dry, brassy cough and expectorated about half an ounce of mucous sputum, occasionally blood tinged, and claimed tubercle bacilli had been found in December, 1916. He had a complete loss of voice and there was a more or less constant dyspnea. The patient claimed he had fever, but we were unable to discover any during his stay at the sanatorium. Examination of the chest disclosed an area of marked, localized dullness over the upper part of the left side. There were a few fine râles over this area, dislodged by cough, but there were not nearly so many râles as one would expect to find on the day following a large hemorrhage. This area showed slight, but not well marked, pulsation. Examination of the larynx revealed a paralysis of the left vocal chord. No lesions of the larynx were present. Reflexes: Argyll Robertson pupils; patellar reflexes and tendo Achillis reflexes were absent, the arm reflexes apparently normal. There was slight ataxia. The patient denied infection with syphilis, but a Wassermann test of the blood was pos-



Case No. 17. Aneurysm of arch of aorta. Showing large tumor mass in upper left lung.

itive. The roentgenographic and fluoroscopic examinations confirmed physical examination of localized dullness in the left apex. Diagnosis of aortic aneurysm and *tabes dorsalis* was made. Early in the morning of February 28, 1917, the patient died from severe hemorrhage. An autopsy confirmed our diagnosis of aortic aneurysm. No tuberculosis was present, despite the fact that tubercle bacilli were said to have been found in the sputum in December, 1916.

18. J. G. K., age sixty-five years; farmer; admitted to the sanatorium August 6, 1916; family history showed that his father and one brother had died of tuberculosis. His health was always good until November, 1915, when he had a cold which was followed by hoarseness. He had lost weight, was hoarse and somewhat tired, but had no cough nor expectoration at that time. When he entered the sanatorium there was no cough nor expectoration. However, he gave a history of having had tubercle bacilli in his sputum. The hoarseness had been continuous in his case since November, 1915. Physical examination of his chest showed a well-marked dullness to the left of the sternum in the region of the second and third intercostal spaces. This dullness was well localized and there was marked pulsation over this area; there was also tracheal tug-ging. There was paralysis of the left vocal cord, but no lesions in the larynx. Fluoroscopic examination showed pulsation over the area of dullness. The roentgenogram showed a dullness in this area connected with the aorta. The sputum was negative. The Wassermann test of the blood was strongly positive. A diagnosis of aortic aneurysm, no clinical tuberculosis, was made. Here again, we were compelled to disregard a history of tubercle bacilli in the sputum. This case was discharged August 17, 1916.

Conclusions.

The conclusions to be drawn from these cases are: that a diagnosis of active pulmonary tuberculosis cannot be made from the various tuberculin tests alone; that in many other diseases the symptoms are identical with those of pulmonary tuberculosis, therefore a diagnosis of tuberculosis cannot be

made from symptoms alone, and here it requires the cooperation of the clinician, the roentgenologist, and the bacteriologist to make a diagnosis; that a history of tubercle bacilli in the sputum must often be ignored in a diagnosis of non-tuberculous conditions; that the physical findings of chronic non-tuberculous lung infections are usually located in the bases, while the physical findings of tuberculosis practically always begin in the apices; that with marked pathological changes in the lungs and a sputum at all times negative for tubercle bacilli, other conditions than those of tuberculosis should be considered; that a diagnosis of tuberculosis cannot be made from a local condition in the larynx without physical findings in the chest; that it is far better to diagnose a non-tuberculous condition as tuberculosis than to neglect to make a diagnosis of tuberculosis when this disease is present.

(I wish to thank Dr. J. F. Wallace, of the x-ray laboratory, M. W. of A. Sanatorium, Woodmen, Colorado, for his assistance in making the roentgenograms used in this paper.)

CESAREAN SECTION IN TOXEMIA OF PREGNANCY.*

L. H. MCKINNIE, M.D., COLORADO SPRINGS.

The question of performing cesarean section upon the eclamptic woman has not been definitely decided. The ultraobstetrical men seem still to be inclined to the conservative methods of treatment, dilatation, with the use of forceps or version in association with various drugs seeming to find favor with a great many. The ultrasurgical men incline toward the opinion that cesarean section is usually indicated, and that the operation should be done at the earliest possible moment. In all probability there will be found a middle ground between these views.

The mortality, both maternal and fetal, by the conservative methods has been very high. Ruben Peterson, with the following tables, gives these results in treatment of eclampsia: in immediate delivery, mortality

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

six and four tenths percent in one hundred and fifty cases; in conservative treatment, thirty-one and two tenths percent mortality in one hundred and forty-seven cases. Before 1900 in spontaneous deliveries, the mortality was twenty-three and thirty-five hundredths percent in one thousand one hundred and twenty-six cases; in operative treatment the mortality was twenty-eight and thirteen hundredths percent in one thousand four hundred and forty-three cases. Between 1900 and 1912 the mortality in spontaneous deliveries was eighteen and ninety-six hundredths percent in two hundred and ninety cases; in operative treatment, fourteen and eighty-three hundredths percent in one thousand four hundred and ninety cases.

There is no question at all in my mind that the death rate in operative procedure is very rapidly decreasing, since the mortality in all abdominal work has decreased very markedly in the last few years and especially so in cesarean section. We have learned comparatively recently that the death rate in cesarean section has been very considerably lowered by the selection of cases. The cases which will do the best are the ones in which there have been no manipulation, no examinations and no needless delay before the operations. It has been definitely shown that the fewer the convulsions, the better the prognosis; and the farther advanced the pregnancy, the more favorable the prognosis. The cases which do badly, and which I feel should not be operated upon, are the ones which have had more or less manipulation. Dilatation of the cervix, the application of forceps or repeated examination should be reasons for declining to operate; and I think we should almost make it a rule to operate upon no infected case, nor upon one where the suspicion of infection is great. If forced to operate, do a celiohysterectomy.

There is no doubt that cesarean section is being abused in some localities, and this we should endeavor to overcome by making no hard and fast rule in regard to the treatment of eclampsia. Each case should be decided upon its own merits. If patients are seen comparatively early and before there

are any convulsions or vaginal examinations, the death rate can be kept very low.

Williams of Baltimore says that no multipara should be subjected to cesarean section, and in only one of fifteen or twenty cases of eclampsia should cesarean section be employed. Statistics are valueless. They can be distorted to prove anything in the practice of medicine or surgery and the personal equation is very important.

I think my series of cases is too small to be of very great value, but feel that they should be reported. I have now had twelve cesarean sections for the toxemia of pregnancy without a death. I know, and you know, that one of these times I am going into a series where I shall have deaths in this condition. I have been very much favored in the handling of these cases in that I have gotten them all early and all from the hands of good obstetricians so that the previous treatment and examinations could be depended upon. These cases have all had one or more convulsions. I have operated upon two cases in which there were no convulsions before the operation. These two cases have come to me from the practice of Dr. Beverly Tucker. The first was a woman who had a small pelvis in which he had expected more or less difficulty with the delivery. Twenty-four hours preceding the operation the albumin in the urine had increased rather rapidly and about ten hours before the operation casts were found in the urine. She complained of slight nausea and the blood pressure rapidly increased from one hundred and thirty to one hundred and ninety. Taking into consideration the patient's rapid increase of toxemia and the fact that Dr. Tucker expected a very difficult and slow labor, we decided to do an abdominal cesarean section. This was done without difficulty under nitrous oxide and oxygen anesthesia. About three hours following the delivery the patient had one slight convulsion. Following this she had an uninterrupted recovery, blood pressure rapidly decreasing and the albumin and casts clearing up in about seven days.

The other case was somewhat similar in history, but had shown for some little time symptoms pointing to oncoming toxemia.

The day of the operation her blood pressure went from one hundred and twenty to one hundred and eighty within a few hours. She became nauseated, began seeing specks in front of her eyes and became restless. The operation was done under nitrous oxide and oxygen anesthesia, and the night following the operation she had nineteen convulsions, they being almost continuous. After the first eighteen hours she had no convulsions and made a very satisfactory recovery, the edema which developed not clearing up for about ten days. She was in a more or less comatose condition for five days.

The last case I have had is rather unusual, a primipara, twenty-three years of age, with a normal pregnancy and normal urine until about the eighth month, when some small trace of albumin was discovered. The urine was not microscopically examined. The morning upon which I saw the case, the doctor in charge called me up saying that the woman was having nausea, headache, black specks in front of the eyes and some dizziness. I told him to remove her to the hospital as soon as possible. In a few minutes he called up again saying that she had had a convulsion. Between that time and when we were ready to operate upon her she had six convulsions, being more or less comatose between the convulsions. The operation was performed without incident, and a premature child, probably of eight months, was delivered. The woman was comatose for nine days, but had only one convulsion following the delivery. Upon the fifth day she was more deeply comatose than the day before, and the nurse in charge noticed that she did not use the right arm or leg. At the time, I thought possibly this was a toxic condition, but it extended to the face and tongue. I believe it was a true hemiplegia, caused, in all probability, by a clot. The paralytic condition has been clearing up rather rapidly, the eclamptic condition clearing up freely, urine clear, the patient leaving the hospital at the end of three weeks in good condition, with the exception of some paralysis. The baby died in three days.

In regard to the death of children, I have delivered thirteen babies, with three deaths.

The deaths were of twins of six months, and the one child of eight months.

As I previously stated, there is no hard and fast rule to which we can adhere in these eclamptic women, but taking up the statistics which have been given in Peterson's papers, and statistics which will accumulate in any of the large clinics, we find that cesarean section is increasing in popularity and in safety, both to mother and child. This is becoming so great that we cannot ignore this method of treatment when we have a toxemic woman to deal with. Many of the older and more thoroughly tried methods of combating this condition are still to be utilized, but when we remember that the prime essential is prompt emptying of the uterus with as little trauma as possible we must very seriously consider cesarean section in all cases.

DISCUSSION.

M. J. Keeney, Pueblo: I have only a few words to say in discussion of this paper. I wish to congratulate Dr. McKinnie on the remarkable operative results achieved in this series of cases, and further on having obtained twelve cases as well selected as these were with so little preliminary examination and manipulation. It is not the experience of most men who are doing surgery and obstetrics, to see so many patients as these who are ideal for cesarean section. The experience of most of us is, I am sure, to be called to cases that have been examined repeatedly and in which attempts at delivery have been made before section is considered; this has been our experience with a few exceptions.

It is a great question what to do with a true toxemic pregnant woman, either before she has had convulsions or after, and this question should start a general discussion in this body. The middle ground that Dr. McKinnie takes is probably the right one at present, especially under ordinary conditions. I thoroughly believe, though, that a young woman, a primipara, who has a well developed toxemia of pregnancy, which does not improve under a short course of treatment, should be looked upon as a case suitable for cesarean section, especially if it is probable that she will have a hard delivery in the natural way. Such a woman may pass into chronic invalidism as a result of high forceps delivery, or some other method of delivery, and cesarean section should be seriously considered.

As to the question of the study of blood pressure in these cases, I understand that in two of them it was an important factor in deciding on operative procedure, and I believe it to be a very important factor in the diagnosis and prognosis of the toxemia of pregnancy.

I also want to call attention at this time to something we all know, and that is, the little attention most of us pay to obstetric patients. Here is one of the weakest points in reference to the whole question. Most of us are not careful enough in making an obstetric diagnosis, and we are much too lax in our attention to these women be-

fore and after labor. Too often incomplete examination of the urine and of the woman is made and she reaches a point where she is subjected to an operation to get her out of difficulty.

Charles A. Ferris, Denver: I thoroughly agree with the last speaker in regard to the immensity of our ignorance with reference to the subject of obstetrics. There is no question as to our all being quite ignorant in regard to obstetric diagnosis; and our knowledge in regard to the treatment of anemias by surgical transfusion of blood is not as thorough as it might be. It is an important fact that blood transfusion is going to be one of the strong arms of the obstetrician if he meets his opportunity in using it in the future, especially in cases of toxemia of pregnancy and also in postpartum hemorrhage.

In regard to the question of cesarean section and the present stage of its development, it is much open to abuse. The abdominal surgeon can open the abdomen of a woman and take a baby out at term by cesarean section with a good deal of ease and pleasure, although he may not know the obstetrical indication for the operation. One large avenue of abuse of the cesarean operation is that it is liable to be performed by the general surgeon in cases where less radical methods of delivery could be resorted to, hence the operation is likely to be brought into disrepute. It is said that this operation should be only done by the abdominal surgeon, but that is not so, and the sooner the general practitioner recognizes the fact that there is a specific place for cesarean section in obstetrics, the better off the average woman in the future will be. Cesarean section is a well established therapeutic measure today, and as Dr. McKinnie has well said, it will grow in favor, if properly studied, and if the time for the operation is properly selected.

In regard to statistics of obstetrical cases, I have kept statistics of cases in a great many directions for the last seven years, and from my experience they are comparatively valueless. The more we learn about obstetrics, the more we will find that there are things we can not know.

In regard to the condition of the urine as an indication for the operation, I have a patient at the present time who is imminently threatened with an eclamptic seizure, is in bed on a milk and water diet, and may have to undergo cesarean section to save the mother and child; yet there is no albumin in the urine. If we depend upon a casual observation which the ordinary urinalysis would show, we will fall down in the general care of our cases.

As to the time of operation, if you watch a case like this you will not know until the woman has an eclamptic convulsion that it is necessary to do something radical, and right there is our weak point, the inability to determine when is the time to do something radical. Cesarean section is a radical operative procedure but, as a matter of fact, in nine times out of ten it should be considered conservative instead of radical, and the future will show that in well selected cases a timely cesarean section is a well established therapeutic advance.

I have operated for the removal of twins at six months, as near as I could judge, but the twins died within three hours after delivery. My earliest case of successful operation for eclampsia was at seven months. The woman came into my office with all the ear marks of impending eclampsia. She was edematous from head to foot. I did a cesarean section. She did not have any convulsions until forty-eight hours after the operation. She is alive and well today, and the baby

is also living. That was four or five years ago.

H. C. Wetherill: I believe Dr. McKinnie succeeded in these cases partly because he gave the patients nitrous oxid gas. We are all familiar with what is known as acute yellow atrophy of the liver. The similarity in symptoms of acute yellow atrophy of the liver and of acute chloroform poisoning as we now know is very close. There is the same icterus and the same disturbance of the secretions. I think the great majority of the profession of today is practically unanimous in agreeing that chloroform should not be given to an eclamptic under any circumstances whatever. While we regard ether under ordinary circumstances as a safe anesthetic, and it may be used, if absolutely necessary, for eclamptics, it certainly is not the anesthetic of choice where gas is available. The reaction upon the kidneys, although slight, constitutes a definite danger. Nitrous oxid gas is without question the anesthetic of choice in operations upon eclamptics.

G. L. Monson, Denver: There are one or two points that might be emphasized, and particularly the time when to operate. We have been guided in our cases by whether or not the woman has had a convulsion.

I think Dr. McKinnie is to be congratulated on his fortitude in doing cesarean section before a convulsion has occurred. We have been in the habit of waiting for a second convulsion. If the woman has had one convulsion, we wait for a second, and then do cesarean section. We are guided by the ease with which delivery has been made through the natural channels. In the case of a primipara, with a long rigid cervix, who has not had any labor pains, I think a cesarean section should always be done. In the case of a woman in labor, with an easily dilatable cervix, with a vertex presentation of O. L. A., the choice would be to deliver through the natural channels.

Another decided consideration in regard to cesarean section relates to the baby. I think we ought to be guided as to what the probable outcome will be in regard to the baby. If we think we have a better chance for the baby by a cesarean operation, we are apt to select that method because the mortality rate for the mother is not increased. In the earlier months, where the chances for the life of the baby are very slight, I think delivery might well be in the nature of a forced labor rather than a cesarean section.

Frank Finney, La Junta: I would like to ask Dr. McKinnie what anesthetic was used in this series of cases?

Z. H. McClanahan, Colorado Springs: Having been in the hospital when Dr. McKinnie's last mentioned patient was brought in, I was asked to see her, and can truthfully say that I would not have thought the case well selected had the doctor been looking to the welfare of cesarean section statistics. The outlook in this case, at the time of operation, was, I think, anything but favorable no matter under what treatment, and the doctor is certainly to be congratulated upon having saved this patient, and, no doubt, as much upon having saved many others of the series.

E. E. Evans, Fort Morgan: I have been instructed by as well as pleased with this paper, as this subject is one that has interested me for many years. About twelve years ago I had my first case of this kind. I was called in consultation to see a patient, a girl of fifteen years, unconscious, who had been delivered by another physician, and had not regained consciousness at the time. I have been impressed with the treatment that is now being tried in these cases. It

seems to me that there is a revolution going on in the treatment similar to that which has taken place in the treatment of placenta previa within the last decade. Twelve years ago I carefully looked over the literature in regard to the treatment of placenta previa by abdominal section, and it was not recommended until within the last two or three years. Now it is coming to be universally employed under certain conditions, not always, of course.

About eight years ago I had a patient who showed a great deal of albumin in the urine, with edema, and I was called hurriedly one morning, being informed that the patient was blind. I called in one of my confreres, we delivered the woman, and she made a good recovery so far as her sight and her general condition were concerned. The life of the baby was lost in the delivery.

About four months ago I was called to attend a girl, fifteen years of age, married, and on arriving there, thirty miles in the country, I found her suffering from intense headache. I had not been able to keep in touch with this patient before this time, and they did not comply with my request for samples of urine to examine, and I knew nothing of what I was going to encounter. I found her very edematous and suffering from intense headaches. In about an hour I made a vaginal examination, which was mentioned by Dr. McKinnie in his paper, and about an hour after this time she had a severe convulsion. I called in a neighboring physician and we proceeded to deliver her. Considerable damage was done to the soft parts in delivery. The child was delivered dead, and the mother never regained consciousness. She had probably twenty-five convulsions (I do not know the exact number) and died in about forty hours.

I saw a case about thirty miles in the country a short time ago which comes within the domain cited by Dr. Ferris. This patient was having some nervous manifestations. I examined her at the office and found she had blood pressure of two hundred and ten. I told her that she must not be surprised if she had trouble before she was through with her pregnancy. The next thing we heard was that she had gone to a neighboring town to a hospital and given birth to a child, and had no trouble whatever. This case shows that we cannot always tell whether a woman is going to have trouble or not.

The important things in connection with Dr. McKinnie's paper are obstetric diagnosis and keeping in touch with these patients and knowing what to expect. It is for their welfare to keep in closer touch with them when they are pregnant, and know what we may reasonably advise them as to the probable outcome of their cases.

O. M. Shivers, Colorado Springs: Dr. McKinnie has given us some excellent suggestions, with most of which, I am sure, we will agree. His conclusions, however, deserve some consideration. I believe there are exceptions other than the ones stated by him, and I would like to relate a case in point that occurred last night. I have seen four cases of this type in an experience of eighteen years. This young woman was cared for in Denver up to a month ago by a very able obstetrician. She came to Colorado Springs and went under the care of one of our best men. She appeared perfectly normal in every way. Her urine was examined once a week. The last examination was made last Friday. She is twenty-three years of age, and has always been well. She weighs one hundred and sixty pounds. She was at a moving picture show night before last. Yesterday she appeared normal and well. Yesterday afternoon

she began to have some pains. Her physician was out of the city. It was about three-thirty o'clock in the afternoon. She was seen last evening at ten-thirty o'clock in labor. The cervix seemed normal, and was dilating readily. An examination was made. She progressed normally until three o'clock this morning, at which time she had a convulsion. On examination, the fetal head was found to be in the pelvis. She was well in the second stage of labor. With the head in the pelvis, it seemed it would be unfair to submit that patient to a cesarean section. She was carried to the operating room and delivered with forceps in less than thirty minutes from the time the first convulsion occurred. There are probably other exceptions, and they must be considered. We all are inclined, when the time comes, to help the mother and baby, and go right along and do a radical operation. If we get too radical along this line, we are likely to be doing cesarean sections for conditions where there is no reasonable excuse for us to do them.

I want to emphasize the fact that there may be other reasons than those which Dr. McKinnie has so ably brought out in his paper for cesarean section.

Dr. McKinnie (closing): I have been asked by a gentleman sitting by my side to emphasize a little more what I mean by manipulation. By manipulation I do not mean that these patients should not be examined. I think it is safe to make a few examinations, but they must be made by men who know how. I think probably there is more carelessness in obstetrics than in any line of surgery. You see all kinds of examinations being made without any preparation whatever of the vulva; a great many times the examiners do not use gloves, and work of that kind is always dangerous, if you are contemplating cesarean section. You cannot very well form a proper opinion without knowing something of the condition of the cervix. I think the application of forceps or the manual dilatation of the cervix always contraindicate cesarean section. The dangers of infection are very great, and the cases that you lose following cesarean section will die not from inertia so much as they will from the infection.

As to the two cases in which I operated before they had any convulsions, I think a great many men throughout the country who are doing obstetrics will agree with me that if there is a rapidly oncoming toxemia, whether we depend upon the condition of the urine or condition of the liver change, we must remember we do not necessarily have albumin in the urine in order to have a toxemic woman; but when we have the other symptoms coming on rapidly, with the woman in labor, or not, cesarean section, in many such cases, will be indicated, and the earlier done the better. I can see no reason for waiting for convulsions if we are convinced they are going to come. If the case is otherwise suitable for cesarean section, I would not wait for a second convulsion.

As I stated in my paper, I have been favored by having good obstetricians on these cases. We have good obstetricians in Colorado Springs. Cesarean section has been successful. It has been definitely brought to their attention. They now think of it, and do not hesitate to resort to it in well selected cases. I distinctly stated in my paper that not all cases of eclampsia are suitable for cesarean section. Some of them can be delivered through the natural channels, and should not be operated upon.

Dr. Shivers reported a case he had last night. Personally I would think it absolutely criminal to

have even thought of cesarean section in that case. There was a woman who had practically delivered herself. Why interfere when delivery by the natural methods is easier and better than cesarean section?

As to the question of Dr. Finney, I will say that eight or nine of the cases out of twelve have had nitrous oxid and oxygen as an anesthetic. I have not bled any of them, but unquestionably venesection has a very marked place in the treatment of these cases, and I think a great many more cases should be bled than are, and if the toxemia clears up under the bleeding, with a good chance of delivery, then spontaneous delivery should be tried.

A FEW DIFFICULTIES IN THE ADMINISTRATION OF ETHER.*

D. E. HOAG, M. D., PUEBLO.

Anesthesia has only recently been given the dignity of a specialty. That a medical man should devote the whole of his time to this art was rare in America until Gwathmey, Flagg and a few others elevated it to its proper position among other specialties in medicine and surgery, although in Great Britain and Canada this specialty has been recognized for a greater number of years. A few of our states now demand that a graduate in medicine shall spend a year in a hospital, in which instruction in anesthesia is given by a visiting anesthetist, before he can be granted an examination for license to practice. Research work along this line, the formation of the American Association of Anesthetists, and other circumstances point toward a scientific interest in this very important branch of medicine.

The Committee on Anesthesia of the American Medical Association in 1912 reported that:

(1) The use of chloroform as an anesthetic for major operations is no longer justifiable.

(2) For minor operations the use of chloroform should cease.

(3) Chloroform is sometimes found convenient for initiating anesthesia in alcoholics or other difficult subjects.

The value of the first and second sweeping statements is manifest. As regards the third, drawing our own conclusions from the unanimity of the reports of the danger attending the induction period of chloro-

form anesthesia, we are justified in stating that chloroform should never be used as a preliminary to other anesthetics. Besides the deaths resulting immediately from chloroform, a large number of fatalities due to delayed chloroform toxicity have been recorded.

Gwathmey defines the duties of the administrator as follows:

"The anesthetist who thinks his duties comprise getting the patient under, maintaining narcosis until the surgeon gives the signal to let up, and seeing to it that the patient is safely removed from the operating room to the bed is doomed to failure. Much more than this devolves upon him. He must be assured that the proper preliminary hygienic, psychic, and medicinal preparation is attended to; he must find out whether the breathing is oral or nasal, and direct his anesthetic vapor accordingly; he must keep a clear air way either by manipulating the lower jaw or by a suction pump or sponging; he must maintain an even narcosis; he must keep the mouth gag (if used) in position; he must protect the patient from too much pressure upon the throat and chest either from the artery forceps, or from an assistant or anyone leaning too heavily upon the chest; he must assist the surgeon in any way that may be desirable, according to the exigencies of the case. He must be equipped for the management of all manner of emergencies which may concern his part of the surgical procedure or the after-treatment of the case."

When possible the anesthetist should make a preliminary visit to the patient twenty-four hours before the operation, as suggestive therapeutics is invaluable. The patient is concerned for her safety. She wants her heart and lungs examined, and wants to be assured that she will safely pass through the anesthesia. Your visit, a careful examination and winning of her confidence will accomplish much in controlling the period of excitement and in lessening shock.

Do not attach too much importance to the pulse rate. Muscular compensation of the heart is of more importance than evidence of valvular disease. The Stang test is one of the best guides as to whether the patient is a good risk. This test is easily made by ask-

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

ing the patient to hold her breath; if she can not do so for a period of at least twenty seconds, acidosis or poor cardiac compensation may be suspected. Always be on guard for the so-called "status lymphaticus" type and, when thought to exist, under no circumstances administer chloroform and give the ether with great care.

Morphine in combination with atropine given one hour before operation in selected cases, generally means a smooth induction; and as a rule a smooth induction means a smooth maintenance of anesthesia.

As there are two classes or degrees of general anesthesia, deep and moderate, the anesthetist should before starting the anesthetic decide the question as to whether the operation requires a deep or moderate anesthesia.

Certain subjects are more likely to give trouble than others and each case must be a law unto itself. Patients who are not moved after the anesthesia has commenced, usually have a smoother induction than others and when possible anesthesia should be induced on the operating table. The old idea that the head and neck must be kept low is a mistake. Provided that the head is not flexed on the trunk, short necked persons breathe best when their head and shoulders are on an inclined plane and higher than their abdomen. If necessary after induction, they can be lowered. Do not strap the patient during the induction period; this should be done before the administration starts or at the beginning of the third stage as excitement often results if this rule is not followed. The room should be quiet and when possible anxious relatives should be kept away. A few drops of a twenty-five per cent solution of oil of bitter orange peel in alcohol sprinkled on the mask, as suggested by Gwathmey, I have found to be of great benefit, especially in children. The mask should be held a few inches from the face in the beginning and, as tolerance becomes established, brought closer and covered with a couple of towels, of course leaving a small opening where the ether is to be dropped. A quiet, slow conversation between the patient and the administrator, according to my experience, is

an aid, although this is condemned by some anesthetists.

Some patients give trouble by breathing in a hesitating and imperfect manner; then again others will hold their breath and refuse to breathe at all. These difficulties are many times caused by the patient breathing through the nose. Often, restricted breathing is due to too strong a vapor; then again although a very dilute vapor is used some patients refuse to breathe. In such cases, encouragement and reassurance must be brought to bear and above all the administrator should never lose patience. After consciousness has been abolished and this breathing still persists, briskly rubbing the lips with a piece of gauze or the finger tips, or sponging out the pharynx will restore the respiratory rhythm. Edentulous patients with the pendulous lips so often found associated with the loss of teeth may give trouble as soon as the second stage is reached. The lips being sucked in during inspiration form a valve which while it permits expiration allows little of air or ether vapor to enter. The use of a dental prop or gag will remedy this. When morphine has been given beforehand and shallow breathing is met with during the induction, no attempt should be made to rush the patient into anesthesia by crowding on the vapor. A few drops of aromatic spirits of ammonia on the mask or lip friction will often correct this.

Sobbing and crying must be carefully treated on account of the liability to the intake of large quantities of the anesthetic. In heavy smokers the contact of an anesthetic vapor will often excite coughing, retching or vomiting. Letting the patient count aloud or placing him on his side is an aid.

Among the common causes of excitement and struggling may be mentioned the presence of inadequate nasal breathing; undue vapor concentration; too rapid administration; lack of preparation; and handling or unnecessarily interfering with the patient while semi-conscious. The excitement and intoxication phenomena which occasionally occur during incipient anesthesia are important for two reasons. In the first place,

the deep and irregular breathing which is often associated with them may lead to the intake of a dangerous quantity of the anesthetic. Second, the muscular spasm which is so prominent a feature of this condition may introduce an asphyxial factor into the anesthesia. When suitable methods are chosen and properly applied, excitement and struggling are exceptional. There are some cases, however, in which difficulties from this quarter will arise, though every care be taken, and this is most often seen in vigorous men, alcoholics, drug and tobacco addicts.

One of the best plans to secure complete muscular relaxation is to administer some preliminary narcotic and induce anesthesia slowly and evenly. Complete muscular relaxation is hard to secure at times and one's resources may be taxed to the utmost. Rigidity is often caused by sub-oxygenation, and in these cases the remedy is obvious. Mayo Robson's method of raising the patient's head and shoulders at one end of the table and his pelvis at the other with certain subjects and in certain operations where it is impossible to secure relaxation should be tried.

Late retching, coughing and vomiting never occur during very profound anesthesia, and it is the duty of the administrator to do all in his power to prevent these occurrences. Some are more subject to them than others, they being most common in children and adults of both sexes who are subjects of naso-pharyngeal catarrh. Swallowing is one of the earliest indications that vomiting is likely to take place; often a high pitched respiratory sound may indicate a tendency to vomit, as may also shallow breathing.

Hiccough is most common when the intestines are being manipulated or operated upon and it is difficult to relieve. Coming on early in the administration, it often stops after the skin incision.

Respiratory arrest is divided into the mechanical and paralytic, the mechanical being caused by (1) occlusion of the upper air passage, (2) substances within the upper air passage and (3) conditions directly preventing lung expansion; the paralytic type being

caused by (1) an overdose of the anesthetic, (2) anemia or (3) reflex action. As to the treatment, the cause must be found and removed. In a large percentage of surgical cases there is a tendency to spasmodic closure of the air way and this is best counteracted by keeping the lower jaw pressed forward. Overriding teeth will sometimes prevent the lower jaw from coming forward. Pulling the chin away from the sternum or completely extending the head over the operating table is often of use in obstructed breathing. An artificial air way is of great help. There are certain postures, e. g. the prone and semi-prone, in which the trunk weight may tell directly upon chest expansion. If breathing becomes much embarrassed or ceases, the patient should at once be placed in the dorsal position and the ordinary means adopted for restoring breathing. Should acapnia ensue, rebreathing must be used. Lip friction, sponging the pharynx, tongue traction are all of help and in desperate cases artificial respiration or laryngotomy must be resorted to.

As to circulatory failure and shock there has been so much written along these lines that it is hardly worth while for me to attempt to say anything. I should like to again call attention to one thing, and that is the prevention. In the case where this condition is likely to arise, and especially when dealing with feeble subjects, special precautions should be adopted. Violent purgation must be avoided, the room kept warm, morphine given when indicated, the surface of the body and the intestines exposed as little as possible, careful dissection done; delay in anesthetization and in operation avoided and the use of the Trendelenberg position resorted to. If the pulse fails entirely the Lewis pendulum swing may be tried.

In closing I can do no better than to quote that master anesthetist, Sir Frederick Hewitt: "Ether preceded by morphine and atropine has placed in our hands a valuable prophylaxis against circulatory failure. All clinical evidence goes to show that grave circulatory shock is almost exclusively met with in deep anesthesia. If the operation be of such nature that shock is likely to arise,

the depth of the anesthesia should, if possible, be lessened just before the critical point."

DISCUSSION.

R. L. Charles, Denver: I agree with practically all of the points made by Dr. Hoag concerning the use of ether; but with regard to chloroform, I do not agree with him. I think he has made his statement too sweeping. Anesthetics are safe only relatively. Under proper conditions chloroform can be given with greater safety than ether, particularly when the latter is not properly administered. Statistics vary so that very little reliance can be placed upon them. For instance, in one article concerning ether the death rate was given as one in a series of four hundred and eighty-one cases. In another article the death rate was given as one in twenty-three thousand cases. In connection with chloroform also you will see differences in the death rate. In one series of cases the death rate is given as one in one thousand one hundred and forty-eight cases and in another series as one death in eleven thousand forty-eight cases, so that very little dependence can be put upon statistics as they are set forth in these reports.

Dr. Gwathmey, of New York City, an expert anesthetist, has written to one thousand four hundred different hospitals in this country, Cuba and Panama, and has asked them for reports of their death rates following anesthetics. Out of the one thousand four hundred hospitals written to only two hundred and one answered, and only ninety-nine of them had any record at all concerning their death rate. He collected one hundred and fifty-seven thousand administrations of ether, and in that report there were twenty-eight deaths. After speaking of the use of chloroform in the southern states, and also in Europe, he said that under favorable conditions, chloroform, if given in a proper manner, is a very close second to ether, if not equal to it. He states that in eighty-five percent of the cases ether is a safer anesthetic.

Dr. Bevan, of Chicago, says that in about eighty-five percent of the cases they use ether in his clinic, so that ether in the majority of cases is to be given the preference. After we have made that choice, we must remember we still have a dangerous drug to deal with and cannot throw aside other precautions. Among the things necessary to insure as much safety as possible is premedication which lessens the period of induction of anesthesia. It lessens the amount of anesthetic necessary, and it lessens postoperative nausea, usually. It also lessens the likelihood of an acidosis following the anesthetic. Ether in small doses is stimulating, but when you give an overdose of ether it has a depressing effect upon the circulation.

R. W. Corwin, Pueblo: One word with regard to noises about hospitals. One thing we should observe in connection with all surgical work is to have as little noise as possible. Much of the noise heard in some hospitals can be prevented. I do not know anything that is more horrible or unpleasant than to bring a patient into an operating room with people all about there, dressed in white, and talking, together with the rattling of instruments and getting things ready for the operation.

Another thing: the man who gives the anesthetic should not be offensive. I mean by that his breath should be sweet and not tainted with the

smoke of cigarettes before he gives the anesthetic.

I want to suggest another thing, and that is not to take hold of the patient after beginning the administration of the anesthetic. I will tell you why. I had an experience some twenty years ago when I was operated on for appendicitis by Dr. McBurney. They took me into a room, and the fellow who started to give me the anesthetic spoke to the attendant who was a big Irishman, a fine looking fellow. He put his hands on me, and I said to him, "You keep your hands off of me and I will be all right; I will go to sleep more easily". I closed my hands, and I was determined if he touched me again, he would know it. The anesthetist said a little later, "He is doing nicely". The big Irishman said he would like to put straps on me. He was about to put something on me when I hit him a hard blow with a smile. This was two o'clock. I awoke at six o'clock and had the same smile.

T. E. Carmody, Denver: There is only one point Dr. Hoag did not mention, although he may have done so in the first few sentences of his paper which I did not hear, and that is the giving of warm ether. I have found warm ether much better than cold ether. I would not have a patient anesthetized with anything but warm ether. Of course, we may have to use cold ether in the beginning, but we can follow with the warm ether, and I have found that by so doing the bronchorrhea, retching and vomiting, and so on, are done away with. This is very important in palate and throat work. You do not have stretching of the palate and tearing loose of the sutures, and you may avoid starting a hemorrhage. What I mean by warm ether is not a can of ether in a pail of hot water. That does not warm the ether at all. It causes evaporation of the ether. It must be passed through a warm chamber and come out at a temperature of one hundred and five degrees to one hundred and ten degrees, and if this is done you will find you will get better results with warm ether than with cold ether.

H. G. Wetherill, Denver: I want to endorse what has been said regarding the preanesthetic administration of remedies to make the amount of anesthetic administered smaller and to overcome the bronchorrhea. One of the most annoying and dangerous things in surgery is the drowning of the patient with mucus in the bronchial tubes and trachea. This can be overcome almost wholly by a proper dose of atropin.

In the literature we see reference quite frequently to what is known as ether pneumonia. There is no such thing. The ordinary pneumonia which we speak of as ether pneumonia is an inspiration or aspiration pneumonia due to the aspiration of secretion from the upper pharynx into the lungs. If an anesthetic is properly given by a competent anesthetist, that type of pneumonia very rarely or never occurs.

Frank Finney, La Junta: I want to say a word in commendation of this paper and to endorse very heartily the conclusion of the writer in regard to starting the anesthetic with chloroform. More than once I have had to put my foot down on that sort of procedure. I am called some place to do an operation, and when the assistants and everybody are ready, I ask who is to give the anesthetic, and find that the young man who is to give it is perhaps one of the local doctors. I invariably ask him, "Doctor, what anesthetic are you going to give?" If he says, "I will give ether, but we will start with a little chloroform", my reply is, "No, doctor, I prefer you to start with ether; I don't want any chloroform given this

patient at all". Chloroform is often given this way more for the convenience of the doctor than for the safety of the patient, and from what we know of deaths from chloroform, it is one of the most dangerous things that can be done.

I heartily endorse what Dr. Wetherill has said in regard to premedication of the patient. That is very important. A dose of atropine and morphine an hour before the beginning of the anesthetic is certainly beneficial.

Thomas A. Stoddard, Pueblo: Just a word in relation to chloroform more particularly. I think chloroform has as much use in the operating room as bichlorid of mercury, and that is all, and you know how much use bichlorid of mercury has in an operating room. I do not believe chloroform should be given as an anesthetic unless in an emergency when ether is not available, and particularly in obstetric cases. I think the man who gives chloroform in obstetric practice has no right to be in the practice of medicine.

Dr. Hoag (closing): I want to thank the members for the free discussion of my paper. In reply to Dr. Charles I can only say that if one will study the physiological action of the two drugs, he will find that chloroform is a heart depressant and ether a heart stimulant; then again chloroform not only kills in the period of initiation, but we have delayed chloroform poisoning to contend with. Some studies of the pathologic changes produced by eclampsia, delayed chloroform poisoning and chloroform anesthesia, show a very close similarity in the findings in all three conditions.

Dudley Buxton, a man who has probably given more chloroform than any other man in the world, in his latest text book lays special stress on the safety of ether in comparison with chloroform. Hewitt, combining Julliard's statistics with those of Ormbsy, gives one death in three thousand one hundred and sixty-two chloroform administrations, against one in sixteen thousand three hundred and two ether administrations.

In answering Dr. Carmody, I regret to say that I have had no experience with the warmed vapor. At Detroit a year ago this summer there was a very interesting paper on this subject, the author saying that there was no real merit in the use of warm vapor despite Gwathmey's research work showing that animals could be killed twice as rapidly with a cold vapor as with a warm one.

The point made by Dr. Corwin of having absolute quiet in the operating room is very important.

I quite agree with Dr. Stoddard when he says that chloroform should be banished from the labor room.

News Notes

Dr. Erlo Kennedy of the state board of health has ruled that saccharine shall not be allowed to be used in soft drinks as a substitute for sugar, on the ground that it is injurious to health.

Dr. Edward Lazell of Denver has left for Washington, D. C., to take a position as clinical therapist and psychotherapist in St. Elizabeth's Hospital, United States Government Hospital for the Insane.

Dr. William J. Rothwell, formerly of Denver, has located at Lafayette.

On October 4 and 5, 1918, the Southwestern Tuberculosis Conference will meet in Denver under the auspices of the National Tuberculosis Association. This is the first meeting of the Confer-

ence in Denver. The following states will be represented: Arizona, California, Colorado, Kansas, New Mexico, Oklahoma, and Texas. Dr. D. R. Lyman, President of the National Association this year, will attend the meeting and deliver an address. Dr. R. W. Corwin of Pueblo is one of the Vice Presidents of the Conference. The preliminary announcement includes papers or talks by Dr. C. O. Giese of Colorado Springs, Dr. Johanna Gelien of Denver, and Dr. R. W. Corwin of Pueblo. Major William P. Harlow, Director of the new army recuperation camp near Denver, will speak on the Vocational Training of Soldiers, and Dr. Horace G. Wetherill on Open Air Schools. Inquiries may be addressed to Miss G. I. Pelton, 251 Coronado Building, Denver.

The War.

Dr. V. A. Hutton of Florence, now at Camp Greenleaf, has been promoted to a captaincy.

Dr. Lewis H. McKinnie of Colorado Springs, now located at Camp Wadsworth, N. C., has been promoted to the rank of major.

Dr. F. R. Spencer of Boulder has received orders to report September 15 at Camp Lewis, Washington.

Lieutenant R. E. Peebler has ordered his **Colorado Medicine** sent to him at N. E. Hospital, S. Tottenham, N. 15, St. Ann's Road, London, England.

Captain J. H. Woodbridge of Pueblo is now stationed at Camp Grant.

Captain J. A. Dunwody of Cripple Creek is now at Fort Crooks, just out of Omaha.

Major Crum Epler, writing to the local chapter of the Red Cross at Pueblo, says: "I am a very busy man, have over half of the clean surgery in this very large hospital. The population which feeds this hospital varies up to a maximum of forty thousand men. Two of us have done three hundred and sixty-six major operations this month, the work being about half and half. I am enjoying the work very much and only hope that we may soon bring the whole war to an end. Remember me to inquiring friends".

Dr. C. E. Condon of Breckenridge has been made a lieutenant in the M. R. C. and is stationed at Camp McArthur, Texas.

Colorado has had returned from Camp Cody within the last two months nearly two hundred registrants. The chief cause for rejections throughout the state was underweight, 39 out of 189 being returned for this cause. Hernia, chronic otitis media with perforation and discharge, defective teeth, flat feet, pulmonary tuberculosis, varicose veins, heart disease, and defective vision all appeared as causes for rejection.

At the annual meeting of the Colorado State Medical Society in Estes Park a conference was held between Lieut. Col. John R. Barber, of Fort Logan, and medical members of Local and Medical Advisory Boards for the interpretation of the standards for physical examination for all branches of the army service.

A letter received in Denver August 11 from Captain W. A. Sedwick stated that he would leave on the following Tuesday with base hospital number fifty-eight for foreign service. On the very day following, another letter informed friends here that the Doctor had had a sudden attack of severe gastrointestinal trouble, was in the hospital, about to undergo an x-ray examination, and that the unit fifty-eight had gone without him. Later reports are that he is now recovering nicely.

Captain Fred Carpenter of Denver spent a week's furlough at his home and vicinity, August 12 to 19, after which he left to report at Camp Des Moines.

Dr. William Edmundson, formerly of Denver and now in the regular army medical corps, has been promoted to a majority.

Captain T. C. Taylor of Fort Collins has been called to Chicago for instructions as to army duties.

Dr. N. D. Wells of Fort Morgan has been given a captain's commission in the M. R. C.

Captain W. T. Brinton of Cripple Creek has reported for duty at the base hospital at Camp Kearney.

Captain D. E. Hoag of Pueblo has received orders to report at Camp McArthur September 22.

Dr. M. J. Keeney of Pueblo has been given a captaincy in the M. R. C. with orders to report at the United States Army General Hospital at New Haven, Connecticut.

Dr. F. W. Brownell of Fort Collins has been given a commission in the M. R. C. with orders to report at Camp Travis.

It is reported that Dr. W. P. Harlow of Boulder has been appointed major in the medical corps of the army and will take charge of general hospital number twenty-one at Aurora, Colorado.

Lieutenant Albert E. Smith of Rifle received his commission June 19 and is now stationed at Fort Rosecrans, California.

Dr. Horace G. Wetherill, examiner in Denver of M. R. C. recruits, has been advised from Washington that doctors within the new draft age limits may continue until further notice to enlist in the medical reserve corps, this being an exception to the rule applying to officers' training camps in general.

Dr. William H. Bergtold of Denver has been commissioned a major in the U. S. M. C. and ordered to report September 23 at general hospital number twenty-one, Aurora, Colorado.

Dr. James Rae Arneill of Denver left in mid-September for Camp Kearney, California, for service in the medical corps, with the rank of captain.

Lieut. R. L. Drinkwater, formerly of Denver, returned to the city in September from Honolulu, on furlough.

Dr. Gurney C. Wallace of Denver is convalescing from operative procedures preliminary to enlistment in the army medical corps.

According to the daily press, all British subjects in the United States who meet the specifications of the new United States draft regulations may continue to enlist in the British army until September 28, after which time they will be subject to draft in the United States without any elective enlistment privileges.

"In a general order just issued, General Pershing addresses the army frankly on the social evil and urges continence as 'the plain duty of every member of the American expeditionary forces, both for the vigorous conduct of the war and the clean health of the American people after the war'.

"General Pershing directs the commanding officers to urge moral cleanliness on the men as their duty as soldiers and the best training for enforced cleanness of life at the front. The order prescribes more rigid control of leaves of absence and directs courtmartial to exercise severity in dealing with infected men.

"It takes all immoral resorts 'off limits' and in cooperation with the French police, both military and civil, takes steps to repress clandestine evasion of the order".—Daily Press.

Conferences on Tuberculosis.

Plans are now under way, according to announcement by the National Tuberculosis Association, for five great conferences covering the country in geographical sections from the Atlantic to the Pacific, to consider practical measures for coping with tuberculosis as a war problem. Starting in the northwestern states, this series of gatherings will extend next to the southwestern group, and then work eastward, taking in the south, the middle Atlantic section and ending with New England.

Means of providing adequate care for the thousands of soldiers and sailors already discharged from the army and navy on account of tuberculosis and the still greater number rejected in the draft for the same reason will be one of the main questions discussed. The closely related question of educating the civilian population more fully regarding tuberculosis during the war and thus combating its further spread in the community at large will also be considered. Not less than 1,000,000 persons in the United States, the National Tuberculosis Association states, are today afflicted with this disease, the annual death toll from which is upward of 150,000.

Anti-tuberculosis workers, physicians, local, state and federal officials, officers of the army and navy, and many others will take part in these conferences. The program for each section, which will differ according to local conditions, will be announced at an early date. The meeting places and dates are as follows: Spokane, Wash., September 27-28; Denver, Col., October 4-5; Birmingham, Ala., October 11-12; Pittsburgh, Pa., October 17-18; Providence, R. I., October 25-26.

ENROLLMENT OF PHYSICIANS NOT AFFECTED BY ORDER SUSPENDING VOLUNTARY ENLISTMENT.

On August 8 the following statement was authorized by the War Department, signed by Newton D. Baker, Secretary of War:

"The War Department today has suspended further volunteering and the receipt of candidates for officers' training camps from civil life. This suspension will remain in force until the legislation now pending before the Congress with regard to draft ages is disposed of and suitable regulations drawn up to cover the operation of the selective system under the new law. * * *

Fearing that this order might be misinterpreted by doctors who would not distinguish between enlistment as a private soldier and enrollment as an officer in the Medical Reserve Corps, Dr. Franklin Martin, chairman of the General Medical Board, asked the Secretary of War to issue a statement making clear this point. In response to this request the following statement was authorized by the War and Navy Departments:

"Orders issued by the War and Navy Departments on August 8 suspending further volunteering and the receipt of candidates for officers' training camps from civil life do not apply to the enrollment of physicians in the Medical Reserve Corps of the Army and the Reserve Force of the Navy. It is the desire of both departments that the enrollment of physicians should continue as actively as before so that the needs of both services may be effectively met."

ENLARGEMENT OF SCOPE OF THE VOLUNTEER MEDICAL SERVICE CORPS.

Statement by Dr. Franklin Martin, Chairman of General Medical Board, Council of National Defense.

The Volunteer Medical Service Corps was authorized by the Council of National Defense on January 31, 1918. Under this authorization the membership of the corps consisted of all physicians who because of overage, physical disability, dependents and essential home needs were not eligible for service in the Medical Reserve Corps of the Army or Navy.

On August 5 the Council of National Defense authorized a change in the scope of the organization and an increase and amplification of its General Governing Board. Membership in the Corps as now authorized makes eligible to the Corps every legally qualified physician, including women physicians, holding the degree of Doctor of Medicine from a legally chartered medical school, without reference to age or physical disability, provided he or she is not already commissioned in the government service. This organization has now the approval of the President.

The Volunteer Medical Service Corps is exactly what its name indicates. It is a gentleman's agreement on the part of the civilian doctors in the United States who have not yet been honored by commissions in the Army and Navy, and a representative board of governors consisting of officials of the government associated with lay members of the profession, in which the civilian physician agrees to offer his services to the government if required and asked to do so by the governing board.

It is a method of recording all physicians who are not yet in service and classifying them so that their services when required will be utilized in a manner to inflict as little hardship on the individual as possible. It is a method by which every physician not in uniform will be entitled to wear insignia which will indicate his willingness to serve his government.

As more than 60 per cent of the physicians of the country will be utilized in caring for the industries at home and the health of the home people, this large percentage of necessity will be expected to maintain their home status and continue their ordinary professional work.

In connection with the mailing of membership blanks for the Volunteer Medical Service Corps to all legally qualified men and women doctors of the country, Dr. Franklin Martin, Chairman of the General Medical Board of the Council of National Defense, says:

"Great as has been the response to the appeal for doctors, it must be greater. It is imperative that every doctor not already in a government service fill out, sign and return the blank to the offices of the Central Governing Board, Council of National Defense, Washington, at once. We believe thousands will do this, as they are anxious to be enrolled as volunteers for the Medical Departments of the Army and Navy before registration under the new draft law goes into effect. The appeal for enrollment in the Volunteer Medical Service Corps, which President Wilson has formally approved, is an official governmental call to service. This will place the members of the medical profession of the United States on record as volunteers, available for classification and ready for service when the call comes."

TUBERCULOSIS VIES WITH WAR IN ITS DEATH TOLL.

The following statement issued by Dr. Livingston Farrand to the press of the United States before his return to France, possesses ample interest for Colorado physicians to justify its reproduction in Colorado Medicine:

Though the sacrifice of lives in the present war has been so enormous as to make all previous losses on the battlefield appear slight in comparison, it nevertheless appears to be a fact that this frightful war mortality does not greatly exceed, and indeed may be exceeded by, the deaths from tuberculosis under ordinary conditions, if equal areas and periods be considered. In the four years since the war began, the total number of deaths from tuberculosis among the civilian population and in the armies of all the countries engaged has at least approximated the total number of soldiers killed in battle.

The significance of this fact for America, now and after the war, is what I want to point out before returning to France. Though thus far our own casualties in the war have of course been small, it is unlikely that any future American losses, after our army at the front has reached the full proportions in view, will surpass, for a given period, the total of deaths from tuberculosis among our civilian population. Actual deaths on the battlefield, or as a result of wounds, and not total casualties, are referred to in this comparison. While the total British casualties, for example, were 17,336 for the week ending July 6, actual deaths were 2,736, or only 15% of the total. Each year the death toll from tuberculosis in the United States is between 150,000 and 200,000. This disease leads all others in mortality.

How widespread the prevalence of tuberculosis is has been revealed to America more extensively than ever before as a result of the physical examinations made by the draft boards and army physicians. Approximately 40,000 men, it would appear from the statistics available, were rejected in the first draft as tuberculous. Many, if not most, of these men have been going about freely in the community not yet aware that they were afflicted with the disease, and that they were sources of danger to others, especially children. Some have known that they had the disease, but have neglected their own condition and their responsibility as regards the health of their associates. Of the men who passed the draft boards, another 10,000, following more searching examination by medical officers of the army, were subsequently discharged on account of tuberculosis, giving a combined total of 50,000.

While the war has thus effectually disclosed conditions which existed before, rather than produced these conditions, it is also true that in indirect ways it has substantially increased the tuberculosis problem in the European countries involved. I refer not to the situation in the armies where the mode of life often tends to reduce the extent of this disease, but to conditions which affect the civilian population. Increase in the price of food, clothing and housing, has exceeded general increase in wages. Consequently, among the lower wage groups who comprise the mass of the population, food supply has diminished in both quantity and quality. This

has produced a state of undernutrition, which in turn has reduced physical resistance to tuberculosis, particularly among children. Among adults, mental stress and worry have lowered general vitality and increased susceptibility to the disease. These indirect effects of the war are clearly evident in France, and will doubtless become increasingly evident in America as the war continues.

Taken altogether, therefore, the problem of tuberculosis by which America is now confronted is one of tremendous size, in the successful solution of which the best energies of the country will be required. Under the leadership of the National Tuberculosis Association, similar associations in every state and some 1,500 local societies are now conducting a vigorous nation-wide campaign against the further spread of this disease. Both its chronic aspects and its acute war phases, the latter involving chiefly adequate provision for the rejected and discharged men previously mentioned, are being systematically attacked. If I may make an appeal to America, on the eve of sailing again for France, it is this: that the people of America throw themselves into the winning of the war against tuberculosis with the same zeal and efficiency with which they have thrown themselves into the winning of the war against the Kaiser. To make our country really safe for democracy, we must first make it healthy.

Book Reviews

Transactions of the American Association of Obstetricians and Gynecologists. Edited by E. Gustav Zinke, M.D., Cincinnati. Volume XXX, for the year 1917. The Maple Press.

This volume of 367 pages takes in the entire transactions of the convention in 1917 of the American Association of Obstetricians and Gynecologists, together with a copy of the constitution and by-laws and lists of all officers and members, also a brief outline of title, location, and professorship of each member.

The president's address is a ringing prelude to the scientific program. It is an address of rare composure, calculated to stimulate higher thought, nobler effort and unity of action in the medical and surgical field. It is an inspiration not only to the apathetic but to all. It is highly intellectual.

Gordon K. Dickinson in his paper on "Fundal Hysterectomy" not only describes a comparatively new operation which promises to save innumerable women from the loss of the entire uterus and the consequent cessation of menstruation and other functions peculiar to women, but very sharply draws the attention to three parts of the body which are closely linked as to functions of their tissues and the subconscious life of the individual—the brain, the thyroid gland and the sex glands—and sounds a warning that anything conventional which interferes with the action of these important organs interferes with personality, sense of comfort, intellect and subconscious life. His line of thought is especially concerned in conservation of the tissues of the female pelvic organs and decidedly repudiates the very least mutilation of them.

The stand taken by Hedges on the time-worn

subject, "When Women Should be Sterilized", advocating sterilization in eclampsia, diabetes, chronic nephritis, pulmonary tuberculosis, cardiac decompensation, pyosalpinx, insanity, and epilepsy, is repudiated in the general discussion, and as usual the subject is left in confusion.

Vander Veer, in his paper on carcinoma of the stump following hysterectomy, puts forth a strong argument in favor of panhysterectomy in case of lacerations, erosions and ulcerations of the cervix and, in technic favors the vaginal route when practicable, but advocates the subtotal hysterectomy where no lacerations, erosions and ulcerations have occurred, in order that the vault and floor of the vagina may be preserved.

This volume embraces in all forty-one of probably the most important topics which come under gynecology and obstetrics, among which are: "Further Clinical Observation on the Use of Radium", "Treatment of Inoperable Cancer", "Left Sided Appendicular Abscess", "The Ductless Glands", "The Thyroid in Gynecology", "Uterovesical Anastomosis", "Causes of Death in Childbirth", "Cesarean Section", "Toxemias of Pregnancy", "Ectopic Gestation", "Management of Labor in Narrow Pelvis", etc., many new methods of treatment being offered and a few new departures attempted in the technic of operations.

A thorough study of this and similar literature combined with the textbooks constitutes the most modern method of keeping well informed upon the subject.

L. J. W.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, Ph. B., M. D., Professor of Clinical Pathology, University of Colorado. Fourth edition, revised and reset. 12mo of 687 pages with 232 text-illustrations and 12 colored plates. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$3.00 net.

Professor Todd's practical manual is distinctly enlarged and improved with each succeeding edition, and the present edition easily takes first rank among the smaller works upon clinical diagnosis. The author shows a familiar working knowledge of nearly all the tests described, and his long training as a medical teacher enables him to put descriptions and directions very clearly and concisely. The illustrations, comprising two hundred thirty-two figures and twelve beautiful colored plates, for the greater part original, are an important and praiseworthy feature of this text-book, a commendable practice being the comparison of similar microscopic objects, as of intestinal ova, in the same figure or plate. The chapter upon animal parasites is one of the best to be found in any medical work. The appendix contains a useful reference list of staining solution formulas, laboratory office equipment, etc. No mention is made in the text of the Abderhalden and a few other over-lauded and interesting but unreliable Teutonic tests. I am pleased to learn that Dr. Todd employs the cobra venom test for syphilis, and says of it, *inter alia*: "The test appears later in the disease than the Wassermann reaction, and yields a higher percentage of positive results in late latent syphilis. Furthermore, it yields less quickly to treatment. It is unquestionably an important aid to diagnosis and treatment in the class of cases indicated". On the whole I know of no book upon the subject of clinical diagnosis better suited to the needs and convenience of medical students and general practitioners than Dr. Todd's attractive manual.

E. C. H.

The Hospital as a Social Agent in the Community. By Lucy C. Catlin, R.N., Director of Social Service Work and Executive Director of the Out-Patient Department of Youngstown Hospital, Ohio. 12mo of 113 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$1.25 net.

This excellent little book shows how the hospital may be made an important social agent in the community.

The author first demonstrates the need of a social service department in dispensaries and hospitals and how this department may be made to unite their interests. In the course of the book she cites a number of case histories to illustrate what can be done for patients who have entered the hospital under various conditions. She shows how, out of this otherwise dependent material, are made self-supporting and decent citizens through the aid of the hospital and its social service department.

The book closes with an appendix containing facsimiles of the different forms of blanks used in the social service and out-patient departments of the Youngstown Hospital. M. R. S.

Differential Diagnosis. Presented through an Analysis of 317 cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School. Volume 2, Second Edition. Octavo of 709 pages, 254 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$6.00 net.

A lighter, more convenient volume containing the same number of cases with here and there some slight modernizing touches in the text are the chief points of differentiation between the second and first editions of Cabot's "Differential Diagnosis". Among the many more recent publications intended to sharpen the diagnostic wits of the reader who is unable to visit the metropolitan centers, the work of this pioneer analyst still retains its interest and stimulus to one's powers of deduction. J. E. W.

A Manual of Histology. By Henry Erdmann Radasch, M.Sc., M.D., Assistant Professor of Histology and Embryology in the Jefferson Medical College, and Instructor in Anatomy in the Pennsylvania Academy of Fine Arts, Philadelphia, Pennsylvania. 1918 Edition; 307 illustrations. Published by P. Blakiston's Son and Company, Philadelphia. Price, cloth, \$2.50 net.

This manual of histology is a well written book for the student. The subjects are taken up in a logical sequence and are treated in a clear, concise manner. There are numerous photographs and schematic drawings, each of which well illustrates the point in question. The book includes some work on the brain which is more often found in a manual of neurology than of histology.

Taken as a whole the book is an excellent manual of the subject. H. C.

Qualitative Chemical Analysis. By A. R. Bliss, Jr., M.D., Ph. G., Professor of Pharmacology, School of Medicine, Emory University, Atlanta, Ga.; Formerly Professor of Chemistry and Pharmacology, Graduate School of Medicine, University of Alabama. Second Edition, Revised and Reset. 194 pages, with working tables. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$2.25 net.

This manual well deserves the wide use which it has already achieved, having been adopted in many schools and colleges, and having been officially recommended by the National Association

of Dental Faculties. The book is thoroughly modern from the ionic and other standpoints, the descriptions of tests are clearly written and easily followed, and all the tests are numbered for ready cross reference. There are eleven excellent tables of metal groups, solubilities and alloys.

E. C. H.

American Addresses, By Sir Berkeley Moynihan, M. S., F. R. C. S. W. B. Saunders Company, 1917.

This particularly pleasing and instructive work written by one of Great Britain's foremost surgeons and representative scholars comes to us at a very opportune time and must surely captivate and interest us intensely by reason of its splendid diction and scientific character.

In his convocation address delivered before the American College of Surgeons, Sir Berkeley Moynihan describes in a very comprehensive way the various causes which led up to the present great European war and discusses the economic and social status which prevailed in Germany prior to the war.

The chapter describing gunshot wounds and their treatment is very thorough both in reference to the bacteriology and to the various operative procedures. The description of gunshot wounds of lungs and pleura is very interesting and shows the thoroughness with which surgeons have gone into this department of surgery and the marvelous results obtained in seemingly hopeless cases.

This work should be a most desirable addition to the physician's library, for the reason that it possesses historical as well as scientific value.

P. A. M.

A Text-Book of the Practice of Medicine, by James M. Anders, M.D., Ph.D., LL.D. Illustrated. Thirteenth Edition. W. B. Saunders Company, 1918.

In this, his latest work, the author has nearly accomplished the impossible. He covers the whole field of medicine, yet in such a careful and concise manner that the book is of value to both the student and the man in general work. The latest therapeutic measures are carefully suggested. The arrangement and phraseology are excellent, and while no special stress is laid upon war diseases many points of importance in camp sanitation are available. Tuberculosis is especially well covered, as are also the infectious diseases. Part five, on diseases of the blood and ductless glands, deserves special mention. Dr. Anders has covered "acres of ground", and his book shows remarkable thought and observation.

H. S. C.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles by Leading Members of the Medical Profession Throughout the World. Edited by H. R. M. Landis, M.D., Volume II, Twenty-eighth Series, 1918. Philadelphia and London: J. B. Lippincott Company.

Those who are familiar with this admirable quarterly will welcome this volume to their medical libraries. The first one hundred and five pages are given up to clinics. Dr. E. W. Archibald gives a general consideration of pancreatitis which is thorough and interesting and should be useful to both physician and surgeon. Dr. E. V. L. Brown then follows with a series of cases illustrating the importance of focal infection as a cause of keratitis and iritis. Dr. John H. Larkin and Dr. I. J. Levy contribute an article on "The Interpretation of Urea or Non-Protein Nitrogen

Estimations in the Blood in Various Kidney Lesions". Then follow four interesting and instructive clinics by Drs. James W. Markoe, Dean Lewis, J. B. Blake and Charles J. White.

In the second section of this volume, which is devoted to medicine, there is an exceedingly valuable contribution by Dr. Charles L. Minor on the "Psychological Handling of the Tuberculous Patient". Dr. John E. Lind then discusses in an interesting and exhaustive manner the "Early Diagnosis and Treatment of Syphilis of the Nervous System" in a manner which will prove of unusual value to the general practitioner.

There is an article in the section on public health by Dr. Joseph S. Neff on "Babies and the Rising Cost of Milk".

In the section on obstetrics and gynecology Dr. E. Vaillie presents an interesting case of enchondrosarcoma on the right side of the pelvic cavity in pregnancy, with remarks on obstructed labor from neoplasms arising in the pelvic bones. Then follows an exhaustive discussion of "Tuberculosis of the Vulva" by Dr. Clément Combeléran. Then Dr. G. Paul Laroque considers the "Diagnosis, Incidence, and Association of Certain Lesions in the Pelvic Organs of Women".

In the surgery section, Dr. M. H. Biggs sets down some facts drawn from his own experience and from the literature on gastric and duodenal ulcer. The presentation of cases of fulminating appendicitis complicated by pneumonia by Dr. G. S. Foster is exceedingly interesting. There is next a thorough consideration of fistula of the rectum by Dr. Charles J. Drueck, and the surgical treatment of extrophy of the bladder by George P. Miller.

The final syllabus of the history of obstetrics and gynecology was prepared by Dr. I. S. Stone.
J. L. M.

The Treatment of War Wounds. By W. W. Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College, Philadelphia. Second Edition, Reset. 12mo, 276 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$2.00 net.

This epitome deserves its popularity. It is well printed on good paper and is amply illustrated. It is as comprehensive and complete as a work of its size could be. It is interesting reading and contains an enormous amount of exact information. I venture to say that anyone, no matter how carefully he has read current medical literature, will learn many things by reading this little volume.

If any adverse criticism were to be offered it would be that the chapter entitled "Carrel-Dakin Method" is handled rather too much as an advocate would consider it. The very strong statement of Sir Berkeley Moynihan concerning the Carrel treatment is not given.

It is a book that every one should read whether he is in the service now or merely expects to be later.
F. C. B.

The Surgical Clinics of Chicago, Volume II, Number II, April, 1918. Octavo of 208 pages, 79 illustrations, Philadelphia and London: W. B. Saunders Company, 1918. Published Bi-Monthly: Price per year: Paper, \$10.00, Cloth, \$14.00.

There is a certain necessary repetition of cases and statements in such a publication as the Surgical Clinics of Chicago. This is a bit tiresome to the man who reads them regularly. It does him no harm, however. Frequent repetition is the way to impress a fact on one's reader. Dr. David C.

Strauss gives a bibliography at the end of his article on compound skull fracture. Whenever possible, this would be an excellent precedent to establish.

The Clinics should be read regularly by the man who is making an honest endeavor to keep abreast of the times.
F. C. B.

Collected Papers of The Mayo Clinic, Rochester, Minnesota. Edited by Mrs. M. H. Mellish. Volume 9, 1917. Octavo of 866 pages, 331 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Price, cloth, \$6.50 net.

The 1917 Mayo Clinic Volume contains eight hundred and sixty-six pages. In printing and general arrangement it is similar to the previous volumes. As I have said for many years in reviewing this book, it is the most valuable of all current medical literature. It is very convenient to have all the papers together so that they can be found when one desires to refer to them. It was the idea of a good many doctors at first that the Clinic was reading for surgeons only. Such is far from the case. There is valuable reading for every medical man.

New names appear every year in the list of contributors. I want to call especial attention to the papers by Stokes. His talks at Rochester in the staff meetings and pathologic conferences are full of information and are given with an enthusiasm that is contagious. His papers in this volume are good. Stokes was a real addition to the Mayo staff.

The influence of the literature that comes from Rochester cannot be over-estimated. Students in medical college get it second hand from their professors in every department after they have filled their systems with the Mayo papers.

No doctor can afford to be unfamiliar with the Mayo Clinics.
F. C. B.

New and Nonofficial Remedies. During August the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion with New and Nonofficial Remedies: Heyden Chemical Works: Silver Proteinate—Heyden; E. R. Squibb and Sons: Chloramine-T—Squibb, Chloramine-T, Surgical Paste—Squibb, Chloramine-T, Tablets—Squibb 4.6 grains, Dichloramine-T—Squibb; Abbott Laboratories: Par-resined Lace Mesh Surgical Dressing—Abbott, Phenylcinchoninic Acid—Abbott.

Genuine Christian science is to give a man who has ague a dose of quinin to destroy the organisms in his blood, to administer to the syphilitic suitable amounts of mercury or arsenic to get rid of the spirochetes, to inoculate our soldiers with antityphoid fever vaccine to prevent this scourge of armies, to make use of antidiaphoretic serum to the lives of stricken children, to properly disinfect the urethra and vagina in cases of gonorrhea both to cure and prevent, and so on. True Christian science is not to stand idly by when a child is strangling with membranous croup and resort to some silent mental treatment, but to promptly administer an efficient dose of antitoxin, which has been the means of saving so many children. This is just as Christian an act as to pull a drowning child out of the water.—Canada Lancet.

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Editorial Comment

WAR INJURIES OF THE EYE.

The greatest group of simultaneous lacerated wounds of the eyes and face that has ever occurred attended the Halifax disaster last December. About two hundred persons were left entirely and permanently blind. The ship that caused the disaster had been on fire for a half hour in the early morning, a general alarm had been sounded, and thousands were standing at their windows watching the light in the sky at the moment when the explosion came which blew the glass inward and injured three thousand persons. From this series of cases it became evident that free drainage—the open treatment of such wounds, with frequent irrigation—gave the quickest recovery.

The proportion of lacerated wounds of the eye followed by sympathetic ophthalmia has been notably small in this war. This has been noticed in Belgium, France, Italy and in the East. Generally the immunity has been ascribed to the antiseptic treatment of the wounds; although the outdoor military life and the character of the terrain have also been mentioned as reasons.

An interesting fact that seems to have been established in the present war is that very serious lesions can be caused at the back of the eye without any damage to the anterior segment; and further that these lesions may be produced by force transmitted wholly through the air. One case has been mentioned in which the near explosion of a shell caused the tearing away of the lids and eyeballs, without any fragment

of the shell or any other solid particle having struck the victim. In his atlas on "Ophthalmoscopy of War", Lagrange has reported serious hemorrhage, pigmentary changes, and other lesions at the posterior pole of the eye in five cases in which neither the history nor careful examination of the body indicated that the eye or adjoining parts had suffered injury from any solid body.

Such lesions at the posterior pole of the eye, including rupture of the choroid and retina and subsequent proliferating inflammation, were found by Lagrange in a still larger series of cases without injury to the front of the eyeball or to any other structures within the orbit; but in the presence of wounds that had caused fractures of the bones of the face. Even when a bullet, a piece of shrapnel, or another foreign body had passed through the orbit and grazed the eyeball, causing damage at the point of contact farther forward, there would be at the posterior pole of the eye a lesion quite separate and apart from the lesion due to direct force and contact.

Many cases of cranial injury are followed by atrophy of the optic nerve, either from direct laceration or through pressure of hemorrhage or inflammatory exudate on the nerve trunk. When the missile passed through the orbit behind the eyeball, there was often a complete or partial avulsion of the optic nerve. This accident, although rare, is known in civil life. It may result from injury by a cow's horn, or from some other injury that tends to tear the eyeball out of its socket. After such an injury, the ophthalmoscope may show a black circular or crescentic hole where the optic nerve should enter the eye. But later this becomes

filled with white scar tissue that looks much like the normal optic nerve; and the retinal vessels are often largely refilled and reestablished through anastomatic branches that exist about the head of the optic nerve.

From war injuries much has been learned with regard to the localization of visual function in the cerebral cortex. What was previously believed as to the location of the visual center in the cortex of the occipital lobe adjoining the calcarine fissure has been fully confirmed. It had also been suspected that certain parts of this cortical region were in relation with, or represented, definitely corresponding parts of the retina. This, too, has been fully demonstrated.

In a general way it is found that the upper parts of the visual cortex are connected with the upper parts of the retina; those of the right occipital lobe with the right halves of the retinas (left field of vision); and those of the left occipital lobes with the left halves of the retinas (right field of vision). It has also been shown that the cortex nearest the tip of the occipital lobe represents the central or foveal region of the retina; and that proceeding forward in the visual centers we have the representation of successive concentric zones of retina, until most anteriorly we find represented the periphery of the retina. These facts have been brought out by exact localization of the injuries inflicted; by employing the x-ray and methods of exact measurement; and by comparing the facts noted with the results of careful mapping of the visual fields.

A wealth of material afforded by this gigantic series of vivisection experiments is now being collected by the physicians and surgeons in military service. When this material has been recorded, collated, and critically studied, it should greatly increase our knowledge of physiology and pathology. The medical and surgical history of the present war is already receiving attention at the Surgeon General's office; and in variety and importance the problems it will elucidate should far exceed those illuminated by the medical and surgical history of the War of the Rebellion.

E. J.

THE VOLUNTEER MEDICAL SERVICE CORPS.

The attention of our readers is especially called to the important communications concerning the Volunteer Medical Service Corps which appear in this issue, beginning on page 257. Dr. Edward Jackson, as chairman of the State Committee of the Volunteer Medical Service Corps, discusses the strongest single criticism which has been made against the plan for the establishment of the Corps, to the effect that it is "indefinite and indeterminate". An official announcement from the office of the president of the Corps denies that anyone is authorized to favor any method of coercion in inducing physicians to join the medical corps of the army or navy or the Volunteer Medical Service Corps. Another document from the office of the president of the Corps gives a series of questions and answers, which aim to deal with inquiries such as are constantly being received at the office of the Corps in Washington.

It was perhaps inevitable that the organization of the Volunteer Medical Service Corps should become the subject of some adverse criticism. The writer of this comment has ventured to suggest (page 61 of this volume of Colorado Medicine) that the need for complete economy in the distribution and use of physicians, both as between army and civilians and also as regards the different sections of our civil communities, would be best served by some special form of selective draft. That this solution of the problem was almost adopted in Washington is indicated in a report of a conference between the Surgeon General and the deans of medical schools concerning medical education and the war, which was held in Chicago on June 11th last. At that conference, Dr. Charles R. Mann (see the Journal of Sociologic Medicine, vol. 19, p. 225) "gave the plan which he had expected to be able to announce as officially approved, but which lacked the final action of the Secretary of War, by which all physicians under fifty-five were to be detailed to service, either as educators or as necessary for the care of the community. By this plan every physi-

cian under fifty-five" was to "have the nature of his service decided for him in the Surgeon General's office. If this plan is approved, and ordered, every physician must file with the Surgeon General papers giving a complete description of his preparation, the nature of his work and the work he considers himself best prepared to do, and must express his personal choice of a service, but his own inclination or the representations of others shall not necessarily determine the service to which he shall be assigned."

This plan, so nearly adopted at headquarters, was apparently discarded in favor of the Volunteer Medical Service Corps. Loyal support, the Corps is capable of doing what the compulsory scheme would have accomplished; although it is possible that the plan "which lacked the final action of the Secretary of War" in June last, might have operated more efficiently, more promptly, and more harmoniously.

MESSAGES AND GREETINGS

From Ex-Presidents and Officers of the Colorado State Medical Society, Read at the Banquet Held on the Second Evening of the Estes Park Meeting.

(From Major Hubert Work.)

Washington, D. C.,
September 1, 1918.

To The Colorado State Medical Society:
Greetings!

The arrival of the forty-eighth annual program of our State Medical Society finds me unable to answer its call, for the first time in thirty years.

It is not the "call of the wild" I recognize, but the appeal of association, for a generation. It is the recollection of kindness, of good fellowship, of differences adjusted, ambitions gratified, disappointments healed, and through it all a confidence so long undisturbed that it has become an affection between men—the rarest of human sentiments.

That our Society should have eight of its ex-presidents, its secretary, members of the House of Delegates, and a very long list of

its members in service, is evidence that as an organization it has answered the call of its state, of its country, and of nations. Many of our members are in preparation for service. Some are braving the seas; others the scourge from trenches, and from there may answer the last summons; but of no one from the Centennial State will it be said, for it cannot be said, "He refused to answer when his name was called".

When you call the Society's roll, you will not hear the responses of many, but please record us as "**being present**".

Sincerely,
HUBERT WORK.

(From Major J. N. Hall.)

Camp Logan, Houston, Texas,
July 23, 1918.

My dear Dr. Jackson:

I find that I shall not be able to attend the State Society meeting, and hence send you this note.

I have been here at the base hospital as chief of medical service since September. Our thirty-third division is on the front line in France, but new troops and recruits are coming in all the time, so we are still finding plenty to do.

In this camp we have laid much stress on post-graduate teaching, both didactic (to a limited extent) and clinical. We have a great amount of material available. For instance: I showed three cases of chronic appendicitis at my clinic yesterday, had a new acute one operated in the afternoon, and have seen two new ones this morning. The eye and nose and throat departments have excellent men, and do a great deal of work, and of a high character.

I am very much taken with some features of army work, and private practice doesn't look so good as it used to. Curiously, Levy writes me that identical thing from Camp Lewis. But I suppose it will all come back naturally enough when the time comes.

I never appreciated the high standards of our Colorado profession so much as since I have been here, and it grows on me all the time. Yet the men here are all earnest and hard workers in study as in ward work.

Give my love to all the boys and tell all

of them for me that if they are fit for the service they must get in.

Yours sincerely,
J. N. HALL.

(From Major W. W. Grant.)

Fort Logan, Colorado,
September 1, 1918.

To the President of the Colorado State Medical Society, Denver, Colo.

Dear Dr. Jackson:

In response to your request I jot down a few notes which I trust will answer your purpose.

To be translated by the necessities and exigencies of war from the peaceful vocation of a surgeon to the duties and activities of a war surgeon is an experience not easy to relate in a brief letter as this necessarily must be. Then, too, when the censor reminds one in most friendly mien that he is for the present emergency not only the servant of the government, but the valiant conservator of its vital interests, one realizes, if he had not before, that for the period of the war, or at least as long as his allegiance is panoplied by martial armor, he no longer enjoys the unbridled freedom of the citizen, but to the end of the world tragedy is simply a soldier of the republic; in order that the opportunities we crave and the liberties we prize, may not perish from the earth. To us and our allies over the wide and bloody seas this is the vital question of the hour.

The medical profession has never long faltered when the cause of humanity and the supreme interests of the nations summoned it, either in the peaceful industries of life, or when war's clarion sounded the tocsin.

To go to school, to study the regulations, the field service, and the varied forms of a nation at war, is to the physician and surgeon of fifty-five or over a novel as well as unexpected sensation, but there is one response dictated by loyalty and patriotism—to serve our country with cheerful devotion and at whatever sacrifice duty demands.

To be the surgeon of a recruiting depot for one year, responsible as an executive officer and as a physician and surgeon, demands of one varied talent and versatility

that few men possess in equal degree. To be chief of a surgical department gives him opportunity to exercise the talent and skill that he has acquired from years of study and experience in a most interesting and instructive field.

The past winter was replete with unusual interest and labor on account of epidemics of scarlet fever, measles and pneumonia with their dangerous sequelae. The mortality was due to a complication with the streptococcus, resulting in many cases in suppurative pleurisy and other rather unexpected complications.

For instance, there were two deaths in which the patients had hemorrhage of the stomach and intestines while suffering from pneumonia, and two from meningeal complications. These cases were rapidly fatal and most of the deaths occurred before the stage of suppurative pleurisy was reached.

Of at least twenty-five cases of empyema operated upon, the histories showed the usual preceding stage of extensive serous effusion. It was our practice to follow the clinical histories closely and, when indicated by the usual physical signs of distress in respiration, aspiration was resorted to frequently, and when the unmistakable suppurative stage was reached, one and one-half inches of a rib in the most dependent part of the chest cavity was resected and a drainage tube inserted. Except in the first three cases the operation was done under a local anesthetic consisting of novocain with the addition of not to exceed one-fourth grain of cocain and four to five drops of adrenalin to five cubic centimeters of distilled water. This was injected around each nerve of the rib to be resected with a wait of about ten minutes in order to get the full benefit of the local effect. Occasionally ethyl chloride was applied to the skin before the incision was made. The operation was, as a result, painless and devoid of shock. The twenty-five cases were operated upon with very small mortality, due partly, I am sure, to the frequent aspiration of the fluid and to operating without a general anesthetic. I call attention, in this connection, to the fact that new and disastrous epidemics are usually more fatal in their

first visitations than in succeeding ones, and this may prove to be the case the coming winter with recurrence of the epidemic. Pneumococcic vaccine may be resorted to in advance of the dangerous winter season.

We have done a great deal of reconstructive work at Fort Logan, in order to relieve soldiers of such disabilities as hernia, hal-lus valgus, hammer-toe, etc. From the first of June to the twentieth of August, we operated on seventy cases of hernia with a most satisfactory result, although we had a few superficial infections from, I am confident, impure catgut. We found a considerable number of hernias with undescended testes, the testes being as a rule in the canal. These were operated upon both for the hernia and with the usual operation for undescended testicle, a pocket being made in the scrotum, and the spermatic cord divided, except as to the vas and the artery and vein. This enabled the operation to be completed without drainage and with a good result. Only the aggravated cases of varicocele are operated upon. In several we found it best, from some experience with a few of these cases that were complicated with hernia, to resect the vein from the canal, not incising the scrotum at all, and the results have been very satisfactory. We found one case of long standing hernia in which the cecum and the appendix were in the scrotum. The appendix was removed and the cecum returned to the abdomen, and the hernia treated in the usual way. It has been my custom to pouch the hernial sack by Kocher's method, and to fortify the posterior wall by two interrupted silk sutures. This reconstructive work has been the means of saving a great many soldiers for general military service who would otherwise have been rejected or designated as fit for domestic service only.

I will not comment in this connection on the surprisingly large number of young men with organic valvular lesions of the heart. It has been interesting also to note the large number of cases of exophthalmic goitre in young men. These cases were uniformly rejected or discharged.

This brief resumé of some of the work done at Fort Logan could be extended

largely, but in response to the wish of the president, I trust this will meet the wishes of the Society.

We have the good fortune to have a splendid executive officer in Lieutenant Colonel John R. Barber, who is the only member of the medical corps of the army on duty at this post. Colonel Barber has made life active, interesting and agreeable to us all. It is always a pleasure to work with an intelligent and genial body of medical officers, and my first serious experience is full of the light and hope that lead us on as a profession and people to a brighter future and the realization of a greater destiny.

Sincerely yours,

W. W. GRANT.

(From Major Robert Levy.)

Base Hospital, Camp Lewis, Washington,
September 1, 1918.

To the President and Members of the Colorado State Medical Society:

It is a far cry from the life of a civilian physician to that of a military one, and still one accommodates himself to this environment and its routine with less difficulty than might be imagined. This is especially true when one is fortunate enough to draw an assignment like the base hospital of Camp Lewis. Not only is the hospital and camp a most attractive place, but the men one meets here and the reception one receives make it very agreeable.

On my arrival four months ago I reported according to orders to the Commanding Officer, Lieutenant Colonel Northington, whom I found a most delightful gentleman, a man of evident force but withal not arbitrary. His policy was to lay down no school-boy rules for grown men, impressing everyone, however, with the importance of his responsibility and expecting the full performance of his duties. He recognized the fact that the men under him were men of mature minds, having achieved something in civil life, and so were to be treated. This placed every one on his metal and was the means of obtaining the best there was in him.

I soon became acquainted with the members of the staff, and a better lot of men, both professionally and personally, would

be hard to find. Since my arrival many of them have been ordered away, among them Colonel Northington. His sterling worth as an organizer was evidently recognized, for he was ordered to Fort Douglas, where an eight thousand bed reconstruction hospital will be established. Our present Commanding Officer is Major Dudley Fulton, formerly chief of the medical service here. Major Fulton comes from Los Angeles. As an internist he has been well known at home and abroad and those of us who are fortunate enough to be more or less closely associated with him here look upon him as possessing the qualifications to command a hospital with the reputation this one has made. We are particularly proud of the record of this base hospital which received from the last inspection by Colonel Chamberlain a most flattering report.

I speak particularly of these two men because the standing of a hospital depends largely upon the Commanding Officer. There have been and still are other men of much professional and executive ability attached to this hospital and you may be interested to know that several Colorado men are in this list. Major Jayne was a decided factor here and is still spoken of; Major Harding, now in charge of orthopedics, was not only a Colorado man but a graduate of a Colorado school; Capt. Lunt, in charge of a sanitary train, gave a good account of himself; Lieut. Leyda, also a Denver graduate, was very popular. At present we have, among Colorado graduates, Capt. Mitchell, Capt. Swindt, Capt. Clement, Lieut. Lewis and Lieut. Kennedy. Capt. Brownell of Fort Collins is in my service and Capt. Dennis of Colorado Springs was attached to this camp for several months but is now in the aviation section. There are probably others whom I can not recall at this time.

Everything here is on the same large scale that characterizes our position in this world's war. We have a capacity of two thousand two hundred patients and are constantly growing. Our staff consists of about one hundred officers and our enlisted personnel about six hundred. The buildings occupy the north end of the grounds, which comprise seventy thousand acres. The en-

tire camp is about five miles long by two miles wide. There are about fifty pavilions which constitute the base hospital proper, each pavilion having a capacity of thirty-six to seventy-two and constructed according to the general plan adopted by the department. Steam heat, electric light, an ice plant, water and good sewerage insure the comfort of the inmates.

One of the most attractive features of this institution is the opportunity it offers for study and research. The laboratories are well equipped and are being constantly improved. Every case receives as abundant x-ray, blood and all other laboratory examinations as are desired. Group medicine is the key note that governs us and nowhere in private practice can a patient be studied as he can here. Consultations are encouraged, in fact, demanded. Further to encourage the scientific side of medicine, and for instruction, a sort of post-graduate course is given. Clinics are conducted regularly, daily staff meetings are held, lectures by laboratory experts in x-ray and bacteriology are given, autopsies are conducted on cases dying in the hospital and, in fact, every advantage taken to utilize this vast material for instruction for scientific medicine and surgery and for the benefit of the soldier.

Many elaborate and valuable reports have already appeared in the medical press. Others have been read here at some of our meetings. I had hoped to present some of these to you, but this letter is already too long. The several great thoughts that come to one while working here are:

First, patriotic and inspiring. One feels that there is only one thing for those in or out of service, and that is to win this war.

Second, the opportunity for real improvement in his medical equipment to the end that he will be a better man after he has completed his service.

Third, and above all, so far as the individual is concerned, the satisfaction that comes to one of having answered his conscience as an American, of having, not made a sacrifice, but taken advantage of the wonderful privilege offered him for demonstrat-

ing his loyalty and assuring him an honorable place in the "re-rating of the nation" now in progress.

ROBERT LEVY.

(From Major W. A. Jayne.)

Office of the Surgeon,
Fort Andrews, Massachusetts,
September 3, 1918.

Dr. Edward Jackson, President,
The Colorado State Medical Society,
Denver, Colo.

My Dear Mr. President:

I thank you for your kind invitation, as an ex-president of the Colorado State Medical Society, to send a message to be read at the coming annual session of the Society at Estes Park. I am the more pleased to accept as I realize that for the second time military duties will prevent my customary attendance, and again I shall be deprived of the most treasured privileges of my professional life, the fraternal clasping of the hands of my colleagues and the renewal of old friendships.

While I regret my inability to meet with the Society, I must confess that this regret is mingled with a deep sense of gratification that I have been called into the active military service of the United States. Nothing in my long professional career has afforded me such profound satisfaction as the opportunity I have had of devoting my time and energies to the aid and relief of the soldiers who must bear the brunt of battle and force to a successful issue the great cause to which this nation has pledged itself.

It is now one year since I was called into service. It has been a busy one. Each day has been filled with pressing duties, often unfamiliar and strange, and I have had few leisure moments. However, my experience as an army officer, first in charge of the cardio-vascular examinations at Camp Lewis, American Lake, Washington, and second as commanding officer of a hospital in the coast defenses of Boston, has been most agreeable in every way.

To those members of the Society contemplating military service, I would say that in the performance of unusual and often try-

ing duties, I have ever had the earnest and cordial assistance and cooperation of older and more experienced officers, who have helped me over many shoals, and I feel I may assure them that honest effort to meet the exacting requirements of the military service will ever receive proper consideration and just recognition.

To all the members of the Society I send cordial fraternal greetings and God speed.

Very sincerely yours,
W. A. JAYNE.

(From Major W. H. Swan.)

U. S. Army General Hospital Number 16,
New Haven, Conn.
September 2, 1918.

Dear Doctor Jackson:

Nothing would give me greater pleasure than to be with you at Estes Park and to attend the annual meeting of our State Medical Society. I regret, too, that very heavy and urgent demands on my time and energy have made it impossible for me to prepare something for the program. The same pleasure was denied me last year.

Let us hope that the next meeting will see this world war over, and a just and permanent peace established on a basis that will ensure safety and justice to all nations, and make impossible a like attack on civilization.

It may interest you to know that six members of our Society have been stationed at this hospital.

Please convey to all the fellows my greetings and heartiest wishes for a very pleasant and profitable meeting.

Very sincerely,
WILL HOWARD SWAN.

(From Captain John R. Espey.)

Rochester, Minnesota,
September 4, 1918.

Dr. Edward Jackson, President,
The Colorado State Medical Society,
Denver, Colorado.

My Dear Doctor Jackson:

When, last spring, I promised to write a letter to The Colorado State Medical Society, I expected to write it from Europe full of such interesting war and medical news as would pass the censor. As I am still in this

country, I take pleasure in sending greetings and best wishes to you and to the Society assembled at Estes Park. How I would love to be there and meet with the old familiar bunch. Many of them are, however, like myself, necessarily absent. We are not so self centered, though, as to doubt that you will have a rousing, successful meeting without us, as we realize that many of the best cogs in our state society machine are by good cause excluded from participating in the war.

I think you will not have a large attendance of men under forty-five who are not exempt by reason of health, other responsibilities, or some other good excuse from participation in the service. "If such there be, go mark them well" and further and stronger language to the same effect.

Last year at Colorado Springs I was present in uniform trying to recruit for the service, and with fair success. If I had to talk to some of the younger members on the same subject this year, I could not be so moderate. However, I think most of those of my acquaintance who can and should enter the service have done so by this time.

Since I have seen you I have had considerable base hospital service. At Camp Cody I enjoyed it until summer coming on rendered climatic conditions rather trying. Fortunately, in June I was transferred to the base hospital at Camp Dodge, near Des Moines, Iowa. This I found to be a very pleasant service in a very large and interesting camp. After the sand storms of Cody, the fine trees, grass and paving and the location in the beautiful Iowa farming country seemed very delightful to me.

I was ordered to the Mayo Clinic at this point, August 3, for a special course of instruction and will return to Camp Dodge about the middle of September. There I will await further orders which may happily be to Europe.

I would like to write a paper on deductions, medical and surgical, from my military service, but this is forbidden except by special permission from the Department, which it is now too late to secure.

I am glad I entered the military service

and would do so again. To any of my friends who are hesitating about this decision I would say, "Come in—the water is fine".

I hope you will have a pleasant and profitable session at Estes Park, as I know that you will. With the very kindest regards to the Colorado State Medical Society and my personal friends there, I am,

Yours very truly,

JOHN R. ESPEY.

(From Dr. C. T. Burnett.)

12, Rue Boissy-d'Anglais,
Paris, May 31, 1918.

Dr. Edward Jackson, President,
Colorado State Medical Society,
Denver, Colorado, U. S. A.

My Dear Dr. Jackson:

In my very hurried preparation for leaving for France, I quite forgot to request you to appoint someone in my place as Chairman of the Committee on Health and Public Instruction of the Colorado State Medical Society. Quite obviously, I will not be able to serve you, and wish to remind you at this late time to place the work with someone else.

About a month ago I saw Dr. Powers in his very excellent hospital near Paris. I suspect at the present time they are pretty busy.

From the medical standpoint, I am seeing some very interesting things and while our work, under present conditions, is exceedingly difficult, I am certain that it will be worth while. I thought many times of the remark you made at a dinner during the late winter, when as a perfectly good quaker you stated that the only solution to the present problem was the annihilation of the German from the political standpoint; those of us who have lived over here have come to entirely agree with you.

Dr. Webb has been in the office twice, but I think he, Dr. Powers and Dr. Farrand are the only men from Colorado I have seen. If any more come over, please give them my address.

Very cordially yours,

C. T. BURNETT.

(From Major Crum Epler.)

Telegram.

Camp Custer, Michigan,
September 8, 9, 1918.

Dr. Edward Jackson, President,
Estes Park, Colorado.

Express to the Colorado State Medical Society my best wishes for an enjoyable and profitable annual session.

Sincerely,
CRUM EPLER.

(From Major S. Fosdick Jones,)

Telegram.

Asheville, North Carolina,
September 9, 10, 1918.

Dr. Edward Jackson, President,
Colorado State Medical Society,
Estes Park, Colorado.

All good wishes for a splendid and successful meeting. Hoagland and I wish we were with you all.

SAMUEL FOSDICK JONES.

(From Major A. C. Magruder.)

Telegram.

Fort Sill, Oklahoma,
September 8, 1918.

Colorado State Medical Society,
Estes Park, Colorado.

Greetings and congratulations! Your forty-eighth annual meeting cannot be other than successful. In lieu of a scientific message, may I be permitted to remind you that there is no greater work today for the medical profession of Colorado than to lend itself wholly and unreservedly to attaining a victory for our arms in this war of reformation. There is no sacrifice too great which you may be called upon to make at this time. You must not be misled into thinking you are not needed by isolated instances where physicians have not been called into service immediately upon receipt of their commissions. No department of our army is in greater need of good officers at this moment than the medical department. Colorado has better doctors than most states and she must freely give them. You cannot offer any reason for not enlisting, except that of physical disability, which is not answered in four words, namely, **your country needs**

you. The sacrifice of every dollar and of every loved one is not too great a sacrifice for us to make. An attitude less loyal is unworthy of a member of our profession.

ALEXANDER C. MAGRUDER.

In addition to the above, extracts from personal letters were read from Capt. W. A. Sedwick, Treasurer of the Society, located at Camp Grant, Illinois, and Capt. W. C. Finnoff, with Base Hospital Number Twenty-nine, in London, England.

Original Articles

THE TASKS BEFORE US.*

EDWARD JACKSON, M. D., DENVER.

The duties most immediately laid upon us are: first to help win the war; second, to win it quickly; third, to win it for those broad purposes that alone have made the winning possible. It is a task so gigantic that we share it with world-wide humanity; so personal that it stands closer to each of us than any other purpose, and fuses into itself every other duty; so immediate that all other issues wait upon its completion. Two definite, mutually exclusive ideals of human life and human society have met in deadly conflict, in a battle line that stretches halfway around the earth, drawing reserves and supplies from every part of the globe. The fate not only of Serbia, Belgium, Armenia, and Poland, but of Holland and Switzerland and Scandinavia, of Asia and Africa and America as well as of Europe, hangs on the issue of that conflict.

With our mastery of steam and electricity, of chemistry and biology, the earth has become too small and too completely exploited for such antagonistic purposes, dominating the minds of men, to continue to exist upon it. Autocracy—the desires, the purposes, the will of a relatively few men—seeks to control the desires and actions of humanity; not by leadership through rea-

*Presidential address; delivered at the annual meeting of the Colorado State Medical Society, September 9, 10 and 11, 1918.

son, or deeper insight, or manifest unselfishness; but by stimulating the brute instincts, and by starvation and stifling of the higher impulses of its immediate victims. The force by which it strives for its purpose is not the force of a strong arm or quick brain, but the force of race life, of economic organization, of modern invention, of world industry, gathered from the world by cunning deceit and debauched intelligence, to serve the aims of a dynasty and a class.

When one savage tribe was overcome by a stronger tribe, it could flee into a range of mountains or across a desert; and maintain itself in peace for a thousand years, building its cliff-dwellings or feeding its flocks, safely guarded by the isolation of nature. When Israel was oppressed in Egypt it could make its exodus, and trust to natural obstacles for protection from its pursuers. Even thousands of years later the Mormons could still find opportunity to plant their institutions in a "promised land." But for Poland there is no "promised land"; for Belgium there are no mountains; for Serbia or Armenia there is no protection by desert or sea.

It is a world, not a nation, that can no longer exist half slave and half free. Democracy must unite its aspirations, its desires, its energy, its courage, its broader view of life, its quick inventive and adaptive genius, to accomplish the work in hand. Magnificently it is doing this. The supreme question put to the world by the trained soldiers, the immense munitions factories, the cunning ambitious war-lords of Europe was: Can Democracy be efficient? It is efficient. That question is answered. What is the proper share of the medical profession in that efficiency?

First we must supply certain technical knowledge and skill required for the healing of wounds and the cure of disease. The value of the medical man to armies has been recognized from the time when he was only a soothsayer and "medicine man." To carry on our proper professional activities in connection with the armies of the United States when, as now provided for, they will include four million men, will require forty

thousand medical officers. One-third of these are yet to be found, trained for the transfer from civil to military life, and fitted into their particular duties in this great international organization that is fighting for the life of civilization.

These officers must be furnished from the citizens of the United States who have already received an education in medicine, or whose medical education can be completed in the next few months. Many have felt that when they could see their way clear to service in which they could be most useful, when the country really needed them, they would offer their services. If they do not offer now, if they do not hear this trumpet call to duty, they are not merely sleeping, they are dead. Dead to the needs of the Nation and of Humanity! Dead to the deepest stirrings and the highest impulses in their own hearts! Dead to the noble traditions and broadest opportunities of our profession!

The conscientious physician spends his days and years in trying to see clearly what it is right and best to do; whether this course or that, in the given situation, will yield the best results; and this is generally an evidence of a high sense of duty. But into all lives there come moments when we must go forward blindly, or not go forward at all; when faith in the righteousness of a cause and the beneficence of the ruler of the universe are the only guides that we have; and the need to go on is urgent. The time comes when we are glad to have the decision made for us; when to have it made is a great relief. That has been the attitude of millions who have registered under the draft law. It now may well be the attitude of every physician and surgeon in this country who is eligible to the Medical Reserve Corps.

The greater part of the draft machinery of the United States is created and operated that men necessary for the army may be assembled and selected in a way that will best conserve the permanent interests and institutions of our civilization, while gaining efficiency for our military forces by putting every man selected into the work for which he is best fitted, and which will

in general be the work he is most ready and eager to do. Under such a policy, conscription has become simply inscription—the registry of men to be assigned. Expressed through popular government, the voice of the people has become the voice of God.

This careful study of industrial fitness and adjustment for the highest efficiency has especially marked the induction into service of the medical profession. So far as I know, no physician or surgeon has been kept permanently out of a line of work for which he was especially fitted. He has been given military training, he has been shown something of the breadth of the service upon which he was entered, and prepared for emergencies that might arise in the course of it; but in the end he has been put to do the work he was fitted for.

The medical services of the United States have gone beyond the needs of its mobilized military forces; and are taking up, as a part of the problem with which they have to deal, the medical needs of the civil population. The medical needs of civil and military populations touch at many points. In the sanitary problems of communities, in the suppression of disease-spreading vice, in the keeping up of the supply of doctors by the continuous sessions of medical and preparatory schools; in the distribution of doctors to communities where they are most needed, the doctor in the army and the doctor in civil life have to be considered together; and they are being considered together.

The Volunteer Medical Service Corps supplements the Medical Reserve Corps. Through the two it becomes possible for a central intelligence and a central authority to wield the medical profession of America, as a mobilized army of physicians and surgeons, with the greatest efficiency against either war injuries or epidemics in civil life—to meet the emergencies of the trenches, or the emergencies of the home. Both sets of needs are receiving careful attention by men who are equal to the task, who are disposed to consider those needs in their broad aspects; and who are dominated by the desire to do their whole duty to the whole American people. They are worthy

of our utmost confidence. Can we not give them in every way our cooperation and our active support?

Let me read you the names of these men, to recall what they stand for in the life and work of our profession:

Central Governing Board of the Volunteer Medical Service Corps.

- Surg. Gen. William C. Gorgas, U. S. A.
- Surg. Gen. William C. Braisted, U. S. N.
- Surg. Gen. Rupert Blue, U. S. P. H. S.
- Provost Marshal Gen. Enoch H. Crowder, U. S. A.
- Dr. Franklin Martin.
- Dr. Edward P. Davis, President.
- Dr. John D. McLean, Vice President.
- Dr. Charles E. Sawyer.
- Rear Admiral Cary T. Grayson, U. S. N.
- Dr. F. F. Simpson.
- Dr. Frank Billings.
- Dr. H. D. Arnold.
- Mr. W. Frank Persons, American Red Cross.
- Dr. Victor C. Vaughan.
- Dr. William H. Welch.
- Dr. Robert L. Dickinson.
- Col. Reuben B. Miller, U. S. A.
- Surg. R. C. Ramsdell, U. S. N.
- Col. James Easby-Smith, U. S. A.
- Dr. Joseph Schereschewsky, U. S. P. H. S.
- Dr. C. H. or W. J. Mayo.
- Dr. William Duffield Robinson.
- Dr. George David Stewart.
- Dr. Duncan Eve, Sr.
- Dr. Emma Wheat Gillmore.

We know their personalities and we know the work they have done. The doctor who will not submit his course to their judgment and guidance in the present crisis tries to hold aloof from the greatest cooperative movement of humanity that the world has ever seen.

From the beginning of this war, shut out by age from the Medical Reserve Corps, I have carefully refrained from urging on anyone else the course that I thought he ought to pursue. But speaking impersonally on this occasion, let me say that I believe it is the duty of every physician who has any chance of being accepted in the medical service of the navy or the Medical Reserve Corps to offer his services in one of those bodies; and for all who cannot ex-

pect to be accepted in either of those services to enter the Volunteer Medical Service Corps.

With regard to the Volunteer Medical Service Corps, I wish to make a special appeal to the women physicians of this State. Even you who are most insistent on your right to equal opportunities and equal emoluments with men can, without sacrifice of dignity and with loyalty to your convictions, apply for admission to this branch of the service. In it you and I shall stand on exactly the same footing. It is a fact that you are women, and it is a fact that I am more than fifty-five years old. We may be convinced that we are fully capable of giving other service to which they will not admit us. But one object of the Volunteer Medical Service Corps is to give an opportunity to express loyalty; and loyalty today is not expressed in hair-splitting argument about our rights, any more than it is expressed by calling on those about us to cry shibboleth with our particular tone and accent. The real opportunity to express loyalty, through proffered service, is before us; let us use it.

If within one week every woman physician in Colorado will apply for admission to the Volunteer Medical Service Corps, she will do more for women's rights, throughout the country and the world, than will thousands of memorials and petitions and resolutions. To those who do promptly and well the work before them come all the greater opportunities for service in this world.

To take from the civil practice of America the physicians and surgeons who were doing half of it must of necessity profoundly disturb the medical and surgical care of one hundred millions of people. No one is more profoundly conscious of this fact than those who have been engaged in creating and organizing the medical services of our new army and navy. It is a growing realization of the importance of this phase of the developing situation, that has been the chief reason for organizing the Volunteer Medical Reserve Corps.

The work that is coming upon us can only be done if our profession is organized and

coordinated. The registration of name, qualifications, physical condition, and professional record of every physician in America is the first step in the mobilization of our medical forces. Idleness, duplication of effort, unnecessary professional attention to those who claim "they can pay for it" must be swept away. The prevention and suppression of disease must, so far as possible, take the place of nursing sick people. Operations that secure health and efficiency must have the precedence over those wonderful achievements of surgery that, too often, preserve valetudinarians for future operations and perpetual treatment.

With as little dislocation of existing arrangements as possible there must be an end of rival physicians sitting in their offices waiting for patients in the cities, while villages and country communities receive inadequate medical services or none at all. There must be a readiness to do the thing that needs to be done, rather than a seeking for the thing we would prefer to do; and a willingness to be told for what work and where we are most needed. The changes are needed; they are possible only as we see that they are necessary, and place ourselves under the guidance of a centralized intelligence that can survey the general field. Such an intelligence devoted to the general interests we have. Let us do our part to make it effective.

What the duties of the Volunteer Medical Service Corps may include, no one can foresee. For some they will be to go on with our daily practice, extending our efforts sufficiently to take care of the patients left unprovided for by the call of others to active military duty. But they may include almost any hospital work not performed by the organized medical service at the military front. They may include active aggressive warfare on epidemics; or the transfer of our activities to another field of practice in which they are more needed. In any case the service asked of us will be indicated with its probable length, conditions and compensation. Only "honor"—respect for our "gentleman's agreement"—will bind us to the work ahead of us. But let us hope that such a bond will control our activities as

completely as any possible penalties that could be inflicted by law or military force.

But the whole of our task of winning the war and winning it quickly is not included in enlistment in some branch of the service and doing the duty assigned. As leaders of public opinion in certain directions, it is our duty to explain and support, and urge by example and public speech, certain measures for the general welfare. The conservation of food and fuel, the observance of the laws of health, demand the general affirmative activity of the whole profession. Let me illustrate by a specific instance.

Sexual immorality and venereal disease have been closely associated with armies and military life, in all countries and all ages. Soldiers may not have introduced syphilis from America into Europe, or from Europe into America. But no nation has yet put an army into the field, or brought an army home, but that army has been a carrier of venereal disease; often to an extent more deadly and more permanently harmful than any military operations of which it was capable. No more terrible instance of "Schrecklichkeit" has been charged against German "Kultur" than its readiness to spread venereal diseases in the populations it has overcome.

There has been a smaller proportion of such disease in the present National Army of the United States than in any large army that has preceded it on the face of the earth. And yet, as Surgeon-General Gorgas has pointed out, the complete eradication of venereal disease would do more for the efficiency of our army than the restoration to the fighting line within forty-eight hours of every man wounded by the enemy. Such improvement in this respect as our army shows has been due to the efforts of our medical authorities in the Army and Navy, backed by the whole-hearted support of the Secretary of the Navy, Josephus Daniels, and the Secretary of War, Newton D. Baker. By their influence, Philadelphia, "corrupt and contented," put its police force under the control of a U. S. Army officer; and Denver passed an ordinance requiring the reporting of all cases of venereal disease.

Now in the forty years since Dr. Wetherill and I received the degree of Doctor of Medicine, something has been learned regarding the control of contagious disease. First you must be able to recognize the disease, second you must know its cause or how it is transmitted, third you must find out who has it. Then you can begin the necessary campaign for its control or eradication. With regard to the venereal diseases, at least in their contagious stages and manifestations, we have attained the greatest certainty of diagnosis. We know their causes and the methods of their transmission. Shall we nullify our knowledge and defeat all intelligent public measures for their prevention by refusing to find out who is infected?

The action of the Denver authorities brought this issue up to the medical profession very abruptly. Could cases of syphilis and gonorrhea be reported without violation of the law guarding communications from patients to their medical advisers, and without making the doctor liable to heavy penalties? I will not undertake to expound the law to you. Perhaps only a decision of the Supreme Court can decide what really is the law regarding this subject in Colorado. But it is not hard to see in this situation a task immediately before us.

There exists an influence that gives aid and comfort to the enemy, destroys more lives and causes greater disability by sickness than any other group of diseases or injuries with which the medical corps of our army and navy have to contend. Shall that waste of man-power, that Hun-saving group of diseases be attacked in the only efficient way, by prevention; or shall we stand before it with idle hands, and plead that we are shackled? Reporting of cases to the health authorities is essential. On it our further efforts to control these diseases must be based. Shall we have it? If I understand the intelligence of the medical profession of Colorado, and the attitude of her citizens toward this war, the next session of the legislature will not adjourn until all legal obstacles to the control of venereal diseases have been swept away, and it has been established by unmistakable enact-

ment that the preservation of public health by the control of contagious disease takes precedence of all private interests that might seem opposed to it. With that may be associated whatever legislation is necessary to safeguard the records of our health departments from harmful publicity or improper use. But neither tradition, conservatism, nor the shrinking from an unpleasant duty not heretofore laid upon us, must prevent us from doing this thing to help win the war and win it quickly.

Taking our proper position as leaders of the thinking of the people along certain lines of vital importance, we shall be moving to do our third task: to win the war for those purposes which alone have made such winning possible. It is to guard and serve the broad common interests of all peoples, that the nations of the earth have united and cooperated, as never before, to crush the dream of a military world autocracy.

The millions who have thus combined see these broad interests from different points of view, and from the different points of view they vary greatly in their relative importance. It is our business to see that the point of view of the medical profession, the conservation of health interests, is sufficiently considered. When men have resolved that the decision shall rest with reason and mutual accommodation, rather than with military force, we shall find an essential unity of desires running through all our allies. Life, liberty, and the pursuit of happiness will still be the essentials that all seek. All who seek them wisely will recognize the high place that bodily health must occupy as a basic condition of the fulfilment of our desires. We who know that truth must insist that health interests are more important, to all peoples, than national boundaries or commercial supremacy. They must be advanced and guarded and made dominant at every point.

The physical life and training of two million young men have illustrated the supreme importance of healthy habits, active bodily exercise and the ideal of keeping physically fit. Let us see to it that the training of the youth of the future includes the practice of the most effective physical exercises, the

eradication of enervating luxuries, the emphasizing of the ideal of constant physical fitness, the cultivation of the art of normal living.

There is at present being demonstrated to the laity on a vast scale the value of certain procedures designed to bring the individual to the highest state of health and efficiency. The removal of diseased tonsils and other foci of infection, the radical cure of hernia, the correction of errors of refraction, enabling young men to attain the required standards for military service, these will equally enable men and women to live on a higher plane of health in civil life, and aid in the better development of growing children.

The study of the health of each individual child in the public schools is more important than examinations to determine whether it is prepared to pass from one school grade to another. In the readjustment that must follow war, in the providing of occupations for the thousands of doctors returning to civil life, this need for the supervision and correction of defects of the developing child must be thrust upon the attention of the public more aggressively than ever before.

Our former President, Major J. N. Hall, told us the other day in Denver that at Camp Logan, situated in a flat, damp, sub-tropical region within fifty miles of the Gulf of Mexico, so thorough had been the campaign for the eradication of the mosquito that practically all the cases of malarial infection that they had to deal with in the hospital were those that had been contracted before the men came to the cantonment. Here again it had been demonstrated that a previously unhealthy region could be made perfectly healthy. These lessons must be applied to the permanent benefit of all the people.

There is no reason why the same sanitary and engineering skill should not be applied for the benefit of civil populations, not merely to make millionaires of the speculators who may get title to the swamps of Arkansas, Mississippi, Louisiana, or Florida; but for the common good. The condensation of population in large cities with the

resulting imperfect physical development and spread of disease, must be checked by applying to the provision of adequate transportation facilities the revenues that arise in rent from such congestion; rather than by having these rents used merely to beautify suburbs in which, on the revenues drawn from them, the owners of the slums can dwell in health that is imperiled only by luxury, never by privation.

We must make all realize that, as was pointed out by one of my predecessors, Dr. Munn, the problem that bears so heavily on us in Colorado, the problem of tuberculosis, is largely an economic problem; one of poverty, and overcrowding, and the monopolizing for gain of opportunities which should be kept open to every human being that comes into the world.

Insistence that the needs of health, rather than the monetary interests of a class of investors, shall determine our tax laws and our public expenditures, is perhaps the most gigantic and permanent of the tasks that lie immediately before us. Only by educating our rescued democracy as to their permanent interests can that task be accomplished.

In the breaking up of customs and traditions, in the revision that war has brought in our habits of life and schemes of education, great opportunities open up before the medical profession to turn the thinking of all democracies toward better ideals of health and healthy living. Let us be active with thought and voice and pen to take up the leadership that rightly belongs to us in this new time.

318 Majestic Building.

News Notes

BULLETIN ON SPANISH INFLUENZA.

The Surgeon General of the U. S. Public Health Service has just issued a publication dealing with Spanish Influenza, which contains all known available information regarding this disease. Simple methods relative to its prevention, manner of spread, and care of patients, are also given. Readers may obtain copies of this pamphlet free of charge by writing to the "Surgeon General, U. S. Public Health Service, Washington, D. C."

Dr. William H. Sharpley, manager of health, Denver, on September 26 named the following Denver doctors as an advisory committee to work with him in the prevention and suppression of "Spanish influenza" in that city in case there should occur an outbreak of the epidemic: Drs. Erlo R. Kennedy, H. G. Wetherill, W. C. Mitchell, R. W. Arndt, G. W. Holden, B. H. Matthews, L. M. Drown, H. L. Taylor, A. H. Williams, A. S. Tausig, C. B. Van Zant and C. N. Meader.

Boston University announces that its medical department has been thoroughly reorganized and henceforth will be non-sectarian. Eminent physicians of the "regular" school will conduct courses in pharmacology and therapeutics and clinical teaching will be given in the Boston City Hospital and the Robert Bent Brigham Hospital. But homeopathic materia medica will be taught as heretofore, with clinical teaching in the Massachusetts Homeopathic Hospital and allied institutions.

The ninth annual session of the Clinical Congress of the American College of Surgeons will be held in New York City October 21-26, 1918. A war session is planned, with distinguished officers of the English, French and Italian armies, together with American medical officers, participating in the evening programs. There will be the usual clinical demonstrations in hospitals, medical schools and laboratories occupying the morning and afternoon hours.

The following interesting summary of the reports of venereal diseases in Denver is reprinted from the Bulletin of the Medical Society of the City and County of Denver, September 21, 1918:

Summary of 3,220 cases:

Total cases treated by physicians.....	1,131
Total cases treated by hospitals.....	162
Total cases treated by druggists.....	1,770
Total number of prescriptions.....	157
Syphilis treated by physicians.....	341
Syphilis treated by hospitals.....	94
Syphilis treated by druggists.....	26
Gonorrhea treated by physicians.....	672
Gonorrhea treated by hospitals.....	61
Gonorrhea treated by druggists.....	1,739
Chancroid treated by physicians.....	118
Chancroid treated by hospitals.....	7
Chancroid treated by druggists.....	5
Prescriptions	157

Dr. W. S. Butterbaugh, formerly of Westcliffe, has removed to Engleburg and is in charge of the medical work of the Colorado Fuel and Iron Company at that camp.

The War Industries Board, through its Chief of Section of Medical Industry, is making a special appeal to the doctors and dentists of the United States to conserve platinum, there being great difficulty in obtaining the needed supply of this metal for war purposes.

Dr. Frank Finney of La Junta, who has been ill for three months with inflammatory rheumatism, has so far recovered as to resume his practice.

Dr. A. C. Davis has moved from Wiley to Lamar, succeeding Dr. Lanning Likes, who is in the service, and Dr. A. D. Field, formerly of Granada, has leased the office and equipment of Dr. C. T. Knuckey of Lamar, who likewise is in the service.

The War.

Dr. T. E. Carmody of Denver has been commissioned a major in the M. C.

Dr. Franklin Blotz of Rocky Ford has been given a lieutenant's commission in the M. C. with orders to report September 24 at Fort Riley.

(Continued on Page 256.)

Minutes of the House of Delegates *of the* Forty-Eighth Annual Meeting of the Colorado State Medical Society

Held at Estes Park, September 8, 9, 10 and 11, 1918

First Meeting of the House of Delegates, September 8, 1918

The House of Delegates met at the Hotel Stanley and was called to order at 8 p. m. by the President, Dr. Edward Jackson, Denver.

The Secretary called the roll, and the President announced a quorum present.

Minutes of previous meeting (See p. 253).

President Jackson delivered a brief address with suggestions, which was referred to the Reference Committee on Reports of Officers. The address was as follows:

President's Suggestions.

The work falling upon the President during the past year has suggested the following changes which might be carefully considered as likely to improve the organic working of the Society:

The induction of the President to office at the first session of the annual meeting following that at which he was chosen. A year as President-elect would enable him to learn more of the duties of his office and prepare him to enter upon them more intelligently and with less of delay.

The President has important duties to perform before he comes to the meeting at which he is to preside. The change of this kind made some fifteen years ago by the American Medical Association, seems to have had satisfactory and beneficial results.

The list of committees to report, with their respective chairmen, should be included in the program of the meeting. This information would be of value both to members of the House of Delegates and to others.

The program should also include a list of the members of the House of Delegates. It would facilitate the business of the Society to know who the members were, and also place upon the proper shoulders responsibility for any failure to attend to their duties.

It should be a recognized duty of the President to visit personally as many of the constituent societies as possible during his term of office. An arrangement of dates for county society meetings, so that those in adjoining districts could be held on successive days, would greatly facilitate such visits.

The President then announced the following **Reference Committees:**

Reference Committee on Reports of Officers—W. T. H. Baker, Chairman; C. F. Hegner, G. B. Gilbert.

Reference Committee on Reports of Committees—Melville Black, Chairman; W. L. Bortree, C. W. Poley.

Reference Committee on Miscellaneous Busi-

ness—J. C. Chipman, Chairman; T. E. Carmody, A. R. Pollock.

Committee on Appropriations—G. A. Boyd, Chairman; G. M. Blickensderfer, Fritz Lassen.

Auditing Committee—J. W. Lehan, Chairman; M. R. Fox, C. W. Needham.

The Acting Secretary, Dr. C. W. Maynard, presented his report, which was referred to the Reference Committee on Reports of Officers. The report is as follows:

Report of the Secretary.

When your Secretary was ordered into service early in June, the records of his office, with your President's sanction, were entrusted to my care. Since that time the work has been largely that of familiarizing myself with the details of the office, and caring for its routine correspondence. The membership records are complicated this year by the "war member" classification, as some paid their dues after being so listed, and many have entered army service since the dues were collected. In the membership lists of the constituent societies, only those whose dues have been remitted are named as war members.

No new constituent societies have been formed during the past year; but the Crowley County Society has disbanded, or at least is inactive for the present, owing to the small number of the physicians practicing in its territory.

Early in August the Secretary of the American Medical Association sent us the Colorado advance sheets from the new directory, with the name of each man who had applied for commission in the Medical Reserve Corps checked to indicate his status on the records of the War Department. The original list was revised to July 1st, and a later revision corrects the data to August 1st. According to this last revision Colorado's credit list is as follows:

Applied for commission (action pending) 32.

Failed to qualify 59.

Recommended for commission 22.

Accepted commission 235.

Failed to accept commission 11.

Resigned or discharged 1.

We sent to the Secretary of each constituent society the official list for its territory, and asked that we be advised as changes occurred. This is being done to some extent.

The American Medical Association is doing an immense amount of work to help keep the Medical Corps full, and asks for the opportunity to co-operate with our War Committee. We should have such a committee.

Our membership has again increased over that of a year ago. The following statement shows the membership of the constituent so-

eties, and the amount of dues collected since the last meeting:

Society.	Paid Members.	War Members	Collected.
Boulder	41	2	\$ 123.00
Delta	13	8	39.00
Denver	313	47	939.00
El Paso	69	17	207.00
Fremont	18	1	54.00
Garfield	12	1	36.00
Huerfano	12	1	36.00
Lake	17	0	51.00
Larimer	27	2	81.00
Las Animas	15	9	45.00
Mesa	18	1	54.00
Montrose	10	2	30.00
Morgan	8	0	24.00
Northeast	14	0	42.00
Otero	18	0	54.00
Prowers	11	0	33.00
Pueblo	52	8	156.00
San Juan	8	0	24.00
San Luis Valley.....	21	2	63.00
Routt	2	1	6.00
Teller	9	1	27.00
Weld	26	4	78.00
Unattached	3	0	9.00
Total	737	107	\$2,211.00
Dues paid twice			\$ 15.00
Members reinstated for 1917.....			9.00

Total turned over to Treasurer.....\$2,235.00

C. W. MAYNARD,
Acting Secretary.

The Acting Treasurer, Dr. William H. Crisp, presented his report, which was referred to the Auditing Committee.

The report is as follows:

REPORT OF THE TREASURER.

From September 25, 1917, to September 9, 1918.

RECEIPTS.

Balance on hand Sept. 25, 1917	\$2,739.42
From Secretary, dues.....	\$2,220.00
(\$2,235.00, less \$15.00 paid a second time by Denver and refunded)	
From editor Colorado Medicine, gross advertising receipts	1,265.90
paid by authors for cuts	3.62
individual subscriptions to Colorado Medicine	10.00
Interest on savings account...	55.19
	3,554.71
Total receipts	\$6,294.13

DISBURSEMENTS.

Journal Maintenance.

Western Newspaper Union, 11 months	\$1,320.39
Western Press Clippings Bureau, 12 months	25.00
Denver hand delivery of journal, 11 months	27.50
Dr. Wm. H. Crisp, editor.....	300.00
Advertising commissions	272.72
Dr. F. B. Stephenson, associate editor	150.00
Dr. H. W. Wilcox, associate editor	25.00
B. F. Stapleton, postmaster, postage	25.00

Carson Harper Stationery Co...	19.00
Postage	8.00

\$2,172.61

Secretary's Office.

Dr. Epler, salary	\$ 150.00
incidentals and stamps	18.58
Dr. Maynard, salary.....	50.00
postage	2.00
Clerks, Miss Erne.....	\$50.00
Miss McBroom ..	35.00
Miss Chew	20.00
	105.00
O'Brien Printing Company....	184.25
Western Newspaper Union, program	29.76
Riverside Printing Co.....	38.85
Wm. Whitford, balance 1917 meeting	94.50
1918 meeting, advance expenses	55.00
	74.58

\$ 802.52

Library.

To library war fund, special contribution	\$ 100.00
Books, Paul Hoeber.....	\$ 1.35
Lippincott	10.80
Troth	66.60
	78.75

\$ 178.75

Total disbursements	\$3,153.88
Purchase of Liberty Bond....	1,000.00

\$4,153.88

Receipts	\$6,294.13
Disbursements	4,153.88

Balance in bank	2,140.25
Liberty bond (face value)....	1,000.00

Gross balance

\$3,140.25
WM. H. CRISP,
Acting Treasurer.

Delegates to American Medical Association.

Dr. Melville Black, Denver, made a verbal report as alternate delegate to the American Medical Association. He stated that he was profoundly impressed with the fact that the first time a man serves as a member of the House of Delegates of the American Medical Association he might just as well stay at home so far as being able to do any good for the state he represents. He could not help but feel it was a great mistake to select a new man as delegate from year to year. The Society should select a delegate for certain reasons and keep him in that position so as to become familiar with the methods of procedure of the House of Delegates and be thoroughly acquainted with the machinery, the political needs, the ins and outs, and so on. He expressed the hope that when the Society elected a delegate, the same man would be re-elected from time to time so as to serve the interests of the Society efficiently.

Dr. H. G. Wetherill, Denver, endorsed what Dr. Black had said and stated that the job of being a delegate to the House of Delegates of the American Medical Association was an onerous one, and under the present arrangement if he happened to be appointed on a reference committee it consumed a good deal of his time. The Society ought to elect a delegate to the American Medical As-

sociation who would be on the job all the time and willing to serve for a number of succeeding terms.

Speaking of the **Committee of Arrangements**, the President stated that the arrangements made for this meeting were chiefly set forth in the official program. A subscription dinner would be held Tuesday evening at the Stanley Hotel, the price of which would be \$1.00 for those stopping at the hotel and \$1.50 for those outside.

In the absence of Dr. J. C. Todd, Chairman of the **Committee on Scientific Work**, Dr. William H. Crisp made a verbal report in which he submitted the official program as the report of the committee.

The report of the **Committee on Public Policy** was called for and passed in the absence of the chairman, Dr. David A. Strickler.

Dr. Melville Black read the report of the **Publication Committee**, which was referred to the **Reference Committee on Reports of Committees**.

The report is as follows:

REPORT OF THE COMMITTEE ON PUBLICATION.

Since the 1917 report of the Committee on Publication, eleven numbers of the journal have appeared. These have contained 299 pages of reading matter, of which about 109 were devoted to papers and discussions from the last annual meeting of the State Society, 40 to other original papers, and the balance, 150 pages, to editorial and miscellaneous matter, including the report of the proceedings of the House of Delegates and the reports of the meetings of local societies.

Forty-seven books and 23 other publications were reviewed, and 67 of these deposited with the library of the State Society in the custody of the library of the Medical Society of the City and County of Denver.

The gross expenditure on the journal for the eleven months was \$2,172.61; the gross receipts for advertising, occasional subscriptions, and amounts paid by authors toward the cost of cuts for their articles being \$1,279.52.

Adding the receipts from advertising etc. to the appropriation at \$2.00 per capita, the total is \$2,967.52, a balance of \$794.91 being left to our credit in the hands of the Treasurer.

The war has affected Colorado Medicine in common with many other medical and other publications. Fewer papers are being offered both for the state and for constituent society programs, and this situation will almost certainly be accentuated during the coming year.

Local secretaries have on the whole been inactive in the sending in of reports of their societies' doings. We would again urge the importance of secretaries and society reporters attending to this matter promptly. It is one of the important features of the journal and should not be neglected. We wish especially to commend our editor, Dr. William H. Crisp, and his associates for their efficient work in the conduct of Colorado Medicine.

MELVILLE, BLACK, Chairman,

Dr. G. A. Boyd presented the report of the Committee on the American Association for Labor Legislation, which was referred to the **Reference Committee on Reports of Committees**.

(The Publication Committee omits this report as too lengthy for publication. See also p. 000).

Report of Reference Committee on Reports of Committees.)

Dr. Charles N. Meader, Denver, presented a verbal report of the

COMMITTEE ON MEDICAL EDUCATION.

During the past year we must necessarily deal with the effects of the war on medical education. When the selective service law was passed last year, it was immediately seen that unless important steps were taken to exempt medical students, this country would find itself in the same position in which England found herself at the end of a year of war, with the bulk of her medical men in the service and with no reserve physicians to be counted on in the future.

It was arranged by regulation that medical students should be allowed to enlist in the Medical Enlisted Reserve Corps and be kept on an inactive status in their medical schools; that their inactive status would depend entirely upon the progress they made in their studies; and that any student who failed to progress from one class to the next, or failed to do good work with his class, would come under the ban of the authorities of his school and would immediately lose his inactive status and be sent into active service. That has been carried out thoroughly, and not a few medical students who failed to keep up with their classes have been taken from their schools and put into active service. That ruling took care of the situation nicely, and nothing further was done with regard to the students until May, when Congress passed a law which exempted all medical students from the action of the selective service law. That law had no reference to the status of the schools, whereas in the earlier ruling only the well recognized schools had the privilege of retaining their medical classes.

The next phase of the situation came with the passage of the latest selective service law which applies to premedical students under the age of twenty-one. In the earlier law the age of twenty-one applied only to a few cases before students got to a medical school. The present law applies to premedical schools, and unless some plan is adopted whereby premedical students can be retained in school, they will be drawn for service and the incoming crop of medical students will be less and the schools will have to close because of lack of students. A plan should be devised whereby premedical students should be put in the students' army training corps and whereby upon a favorable report from college officials they could keep up their studies until such time as they graduated and were drawn into the service.

The effect of the volunteering of members of faculties became apparent with the beginning of the medical schools last fall, and as more and more members of faculties are entering the service from time to time, the faculties of our medical schools have been and are being seriously reduced. The Surgeon-General has maintained that medical schools must be kept up to a high state of efficiency. The evident intention is to retain a sufficient number of medical men in their individual capacities in the schools to make sure the schools do not suffer. With the four quarter system being put into operation, it is obvious the War Department is going to push medical education at top speed

for those men who are allowed to continue in their classes, and it is also obvious that medical students who do not come up to standard will be taken out and promptly put into service.

So far as this applies to the University of Colorado School of Medicine, it may be said that this school has been in continuous session this summer. It decided last spring to put juniors and seniors straight on through a continuous session, juniors and seniors starting the middle of June with their respective classes. Under this plan seniors will graduate the middle of February, and present juniors will graduate a year from this October, thus saving four and eight months time. This school will be on the four quarter system until the end of the war.

The University of Colorado School of Medicine has thirty-six already in active service out of a faculty of one hundred and twelve. Forty-three members of the faculty are ineligible by reason of either age or physical disability, and of the balance that are eligible for service, only twenty-one were named on the list as essential teachers, including eight indispensable laboratory men.

In the absence of Dr. O. M. Shere, Chairman of the Committee on the Workmen's Compensation Act, the report of this committee was read by the Acting Secretary, and was referred to the Reference Committee on Reports of Committees.

The report is as follows:

REPORT OF THE COMMITTEE ON THE WORKMEN'S COMPENSATION ACT.

Mr. President and Members of the House of Delegates, Colorado State Medical Society:

The Committee on Workmen's Compensation, appointed by your President a year ago, can boast of no great achievements during its tenure of office.

While the fee schedule, as changed during our incumbency, has somewhat advanced the medical and surgical honorarium for professional services, even with this increase it is as yet far from satisfactory, but, in fact, niggardly when compared with the ordinary fees that obtain in private practice. Let this fact, however, be here noted, that the advance has been made voluntarily by the Industrial Commission and not because of mediation of your Committee.

It is not our object in this report to find fault with the Colorado Industrial Commission, which simply administers the compensation business in accordance with the law passed by the Colorado legislature in 1915. Unfortunately, however, the legislature did not delve sufficiently deep into the different phases when the law was framed, with the result that the act is restrictive upon our profession; and it is therefore the object of your Committee at this time to present to you an analysis of the existing law with recommendations for its amendment.

It may not be amiss to indicate the reason for the injustice done to our profession when the law was enacted. In our opinion this may be ascribed to the fact that when the act was being legislated our members did not take the same care of their interests as did the other parties affected by this law. Physicians as a class have ever been loth to discuss the question of pecuniary compensation, so that many of the injustices occurring to us in a business way have been

through our own lack of interest in the financial side of the question. Thus many of the defects in the Colorado law should be laid at our own doors because of our own apathy.

Be that as it may, let us analyse Sections 49 and 50 of the Act, which directly concern the members of our Society.

Section 49 . . . "The Commission shall have full power to adopt rules and regulations with the respect to furnishing such medical and hospital service and medicine as provided for in Section 50 to injured employes entitled thereto, out of the State Compensation Insurance Fund, and the same shall be paid for as in this Act provided for compensation and benefits."

Section 50. "Every employer, regardless of his method of insurance, shall furnish such medical, surgical and hospital treatment, medical, hospital and surgical supplies, crutches and apparatus as may be reasonably needed at the time of the injury and thereafter during the disability, but not exceeding thirty days from the date of the accident and \$100.00 in value to cure and relieve from the effects of the injury provided that medical, surgical, and hospital treatment, payment for which is provided for in any plan now in force between employer and his employes at the time of the enactment of this Act or which is thereafter agreed to by the employer and employe, shall be deemed a full compliance with the requirements of this section and shall be received by the employe in full accord and satisfaction thereof . . ."

In the light of the foregoing it is self-evident that a case of compound fracture or for that matter any serious injury occurring in the various industries which requires more than thirty days treatment or more than \$100.00 for hospital fees, dressings, medicines, to say nothing of the surgical fee, is not covered by this Act.

When this matter was presented at a conference between the chairman of your Committee and the Industrial Commission, the latter admitted from personal experience the incongruity of such a clause in the law, but expressed their utter helplessness to deal with this matter otherwise, by reason of the specific limitations embodied in the law, which after all is the only basis for their administration. Their duty, they claim, is to interpret the law as it is written and not to change it.

If there are any changes to be made, and anyone who carefully surveys the above sections must admit that such a contingency exists, such changes must come directly through the efforts of our Society. Workmen's compensation insurance is being universally adopted. Already in force in thirty-four states, it has come to stay. From August 1, 1915, on which date our compensation law became effective, to August 1, 1918, there were reported to the Industrial Commission of Colorado 40,025 accidents which had occurred in our state. You will realize that the matter of fees is of formidable importance, and unless the fee question is amicably settled it will seriously interfere with the proper working of the Act.

We therefore recommend that before the next meeting of the legislature which will soon convene, a special committee be appointed by our Society with instructions from

the House of Delegates to insist that legislation shall be enacted which will provide:

1. That reasonable surgical, medical and hospital services, medicines and supplies, as and when needed, shall not be limited to the first thirty days after the disability begins, but shall be furnished during the entire period of the disability.

2. That the one hundred dollar limit for medical, surgical and hospital fees be abolished and that the hospital and nursing costs be placed in a separate item.

3. That, realizing the urgent need for a schedule of specific charges in respect to injury, such a schedule of fixed prices shall be agreed upon by a committee of medical men appointed by the State Medical Society for that purpose and the Industrial Commission, and only after such agreement shall the accepted schedule be embodied in the Act as amended.

4. That a medical man be appointed or approved of by our Society who shall act in the capacity of a medical adviser to the commission.

Respectfully submitted,

O. M. SHERE,
Chairman.

The report of the **Committee on the Study and Control of Cancer** was called for.

Dr. C. F. Hegner, Denver, stated that there was no report from this committee.

The report of the **Committee on Medical Defense** was called for, but there was no report.

Under the head of "new business", Dr. H. G. Wetherill stated that he was chairman of a committee appointed by the Denver City and County Society to select an emblem or insignia for the motor cars of physicians in the City of Denver. He submitted samples for such an emblem, and called attention to the fact that the American Medical Association was considering the selection of an emblem for all physicians in the United States. He desired to present this matter for such consideration as the House of Delegates might wish to give it.

On motion of Dr. R. E. Holmes, the matter was referred to the Reference Committee on Miscellaneous Business.

The Acting Secretary presented a communication from a committee appointed by the **Colorado Funeral Directors' Association**, which was referred to the Reference Committee on Miscellaneous Business.

This communication follows:

Probate Laws; Collection of Medical Fees.

"April 29th, 1918.

Dr. Crum Epler, Secretary Colorado State Medical Society, Pueblo, Colo.

Dear Sir:

Pursuant to instructions from the State Committee of the Colorado F. D. A. I write you: It is patent to all that members of the Medical Society and funeral directors lose a great amount of money and greater percentage of their bills than any other class of professional or business men.

It is imperative that some means be employed by which collections can be made and a measure of protection afforded either by legislative action or in some other manner such as laws passed for protection of hotels, etc.

Recognizing these conditions and believing that such action is necessary and would be of mutual advantage and that co-operation in the matter would be much more effective

than individual effort, the Colorado F. D. A. at convention last year, passed a resolution appointing a Committee on Legislation, and requested said committee to endeavor to enlist the co-operation of the medical societies to the end that better laws be enacted for the protection of the members of the Colorado State Medical Societies and Colorado Funeral Directors Association for the collection of bills and probate laws.

The following committee was appointed by the latter association:

Denver: C. A. Rogers, W. P. Horan, George Bostwick.

Pueblo: C. C. White, T. G. McCarthy.

Las Animas: B. B. Sipe, Roy Campbell.

Boulder: J. G. Trezise, William Tippet, A. E. Howe.

Weld: F. J. Albruet, Thomas Simpson, George I. Richards.

Larimer: J. B. Bell, W. T. Hollowell, H. M. Palmer.

Lake: E. R. Omalia.

Mesa: T. F. Callahan, E. A. Krohn.

El Paso: E. T. Biglo, David Law.

Garfield: W. H. Farnum.

Trusting you may favor this effort and appoint a conference committee or take such other action as you deem best, we await your pleasure.

Very respectfully yours,

T. G. McCARTHY,
Chairman Legislative Committee."

Dr. C. F. Hegner moved that a cablegram or letter of good cheer be sent to the members connected with Base Hospital No. 29.

Motion seconded by Dr. Melville Black.

Dr. T. E. Carmody moved to amend that the officers of the Society communicate the good wishes and remembrances of the Society to those members who are engaged in service in Base Hospital No. 29. Motion seconded.

Dr. Baker moved to further amend that it include all members of the Society in the service. Motion seconded.

Dr. Crisp suggested that a better way to handle this matter would be for the Society to pass a resolution, instead of sending a letter, and have it published in Colorado Medicine, as many of the men abroad were receiving Colorado Medicine.

Accordingly, Dr. Crisp moved as a substitute that a special committee be appointed to draft a resolution and submit it to the House of Delegates for adoption, such resolution to be published in Colorado Medicine.

The substitute was seconded, accepted, put to a vote and carried.

The President appointed as this special committee Drs. C. F. Hegner, W. T. H. Baker and William H. Crisp.

The following were elected members of the Nominating Committee: G. M. Blickensderfer, Chairman; W. T. H. Baker, J. C. Chipman, G. A. Boyd and R. E. Holmes.

On motion of Dr. Pollock, the House of Delegates adjourned until 9 a. m., September 9.

Second Meeting of the House of Delegates, September 9, 1918

The House of Delegates met at 9 a. m. and was called to order by the President.

The Secretary called the roll, and the President announced a quorum present.

The minutes of the previous meeting were read and approved.

The report of the **Committee to Cooperate With**

the State Pharmacal Association was called for, and in the absence of the chairman, Dr. Blickensderfer, a member of the committee, stated that so far as he knew nothing had come before the committee for consideration; therefore there was no report to make.

On motion, the report was accepted and referred to the Reference Committee on Reports of Committees.

The report of the Auditing Committee was called for, and the Chairman of this Committee asked for further time, which was granted.

The President stated that the minutes of the last meeting of the House of Delegates of 1917 had not been approved, although they had been published in Colorado Medicine.

Dr. L. W. Bortree moved that these minutes be accepted as published in Colorado Medicine. Seconded and carried.

Dr. Melville Black tendered his resignation as alternate delegate to the American Medical Association, which was accepted.

On motion of Dr. Carmody, the House of Delegates adjourned until 8 a. m., Tuesday, September 10.

Third Meeting of the House of Delegates, September 10, 1918

The House of Delegates met at 8:30 a. m. and was called to order by the President.

The Acting Secretary called the roll, and the President announced a quorum present.

The minutes of the previous meeting were read and approved.

Dr. W. T. H. Baker, Chairman of the Reference Committee on Reports of Officers, presented the following report:

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS.

Your Committee on Reports of Officers beg leave to report as follows:

1. We heartily concur in the suggestion made by your President that our present plan of inducting the presiding officer into office be changed, and would suggest that an amendment to the constitution be proposed at this meeting which will permit of a president-elect; this to be voted upon at our next annual meeting.

2. We agree with your President that the list of committees with their respective chairmen be included in the program of the meeting.

3. A list of the delegates should also be included in the official program of the Society.

4. If possible, under the changed conditions of affairs due to the war, for our incoming President to visit all county societies during the coming year, or for our Vice-Presidents to do so, we feel that much good could be performed and a greater interest created for the State Society.

5. We commend our Acting Secretary and Acting Treasurer upon the excellency of their reports, realizing that their duties have not been light and that they have taken up the burden laid upon them in a splendid way. No better men could have been chosen.

Respectfully submitted,

W. T. H. BAKER,
C. F. HEGNER,
G. B. GILBERT.

Dr. L. W. Bortree moved that the report be accepted as read.

Seconded and carried.

Dr. Melville Black, Chairman of the Reference Committee on Reports of Committees, read the report of this committee as follows:

REPORT OF REFERENCE COMMITTEE ON REPORTS OF COMMITTEES.

The report of the Committee on the American Association for Labor Legislation opens up a field of controversy on questions with which this scientific body has never dealt, and which it seems to us do not properly come within its field of action. We recommend that the report be received and the committee discharged.

The Report of the Committee on Workmen's Compensation Act.

We recommend that a committee of five be created and that Dr. O. M. Shere be made its chairman with power to choose the other members of the committee from the membership of the State Society; that the committee be delegated full power by this body to represent it in conference with the Industrial Commission and with appropriate committees appointed by the state legislature this winter; and that our committee endeavor to enact into law a compensation act which will do justice to the medical profession of this state.

Annual Report of the Publication Committee.

We are pleased to note that Colorado Medicine has saved \$794.91 during the past eleven months, and endorse the recommendation of the committee that Dr. William H. Crisp and the associate editors be thanked for their excellent management of the journal.

For the last two years the Committee on the Prevention of Cancer and the Committee on Medical Defense have done no work, and because of the present emergency with regard to the war we recommend that both of these committees be discharged.

L. W. BORTREE,
MELVILLE BLACK, Chairman.

The report was considered section by section, each section being adopted as read. At the conclusion of the last section, Dr. Carmody moved that the report be adopted as a whole.

Seconded and carried.

Dr. J. C. Chipman, Chairman of the Reference Committee on Miscellaneous Business, presented the report of this committee and moved its adoption, which motion was duly seconded and carried. The report is as follows:

REPORT OF THE REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS.

We, your Reference Committee on Miscellaneous Business, beg to report:

1. We recommend the adoption of the round emblem as presented by Dr. H. G. Wetherill of the Denver County Medical Society, with the understanding that should the American Medical Association adopt a different emblem, we accept the same instead of this.

2. We recommend that the communication from the Colorado Funeral Directors' Association be laid on the table.

J. C. CHIPMAN, Chairman,
A. R. POLLOCK,
T. E. CARMODY.

REPORT OF COMMITTEE ON NOMINATIONS.

Dr. G. M. Blickensderfer, speaking for the Committee on Nominations, stated that a number of the members of the Society were now in the service of the United States government and by virtue of that fact were not able to be present at this meeting, yet the Committee on Nomi-

nations felt that these men should be honored as they deserved to be, and the committee had a list of nominations ready to report at this time if there was no objection on the part of the House of Delegates to placing those men in nomination who were not present at this meeting but were in the service.

As there was no objection raised, the chair ruled that those who were engaged in the service of the United States should be regarded as constructively present at the meeting, and that the section of the by-laws requiring their presence at the meeting in order to be eligible for office should be suspended for the period of their service.

Dr. Blickensderfer then submitted the following nominations:

President, Dr. F. H. McNaught, Denver; First Vice-President, Dr. J. J. Pattee, Pueblo; Second Vice-President, Dr. Florence Fezer, Greeley; Third Vice-President, Dr. R. B. Porter, Fruita; Fourth Vice-President, Dr. John A. Biles, Del Norte; Delegate to the American Medical Association, Dr. J. N. Hall, Denver; Alternate for Dr. Hall, Dr. George H. Curfman, Salida; Alternate for Dr. L. H. McKinnie, Dr. H. G. Wetherill, Denver; Councilor to succeed Dr. M. J. Keeney, Dr. L. E. Rupert, Florence; Publication Committee, Dr. Melville Black.

It was moved that these nominations be concurred in.

Seconded and carried.

The Chair stated that the election of officers would take place tomorrow morning, immediately after the reading of the minutes.

Dr. Blickensderfer stated that the Nominating Committee recommended Denver as the next place of meeting.

Dr. Lehan presented the report of the Auditing Committee, as follows:

REPORT OF THE AUDITING COMMITTEE.

Your Auditing Committee wish to report that they have audited the books of the Treasurer and Acting Treasurer, Drs. Sedwick and Crisp, also of the Secretary and Acting Secretary, Dr. Crum Epler and Dr. C. W. Maynard, and find them correct in every detail.

Respectfully submitted,

M. R. FOX,
J. W. LEHAN,

Dr. Carmody moved the adoption of the report. Seconded and carried.

REPORT OF THE COMMITTEE TO COOPERATE WITH THE STATE PHARMACAL ASSOCIATION.

Dr. George A. Moleen, Chairman of the Committee to Cooperate with the State Pharmacal Association, made a verbal report, stating that several conferences had been held and matters of mutual interest between the pharmaceutical and medical professions discussed, but no action was taken, and there was nothing particularly to report further than to suggest to the succeeding committee that attention should be called to a question that had been raised which was of great importance to both professions, namely, that there was a movement on foot to abandon the use of alcohol in fluid preparations of botanical drugs. He thought this was carrying a hobby too far. Not only Remington but other pharmacists had demonstrated that acetic ether and acetic acid, while extracting the virtues of a certain number of botanical drugs, were not to be compared with alcohol and glycerine as men-

strua for removing the alkaloidal principles on a research basis. Any such action should be met both by the medical and pharmaceutical professions, for it would depreciate the value of fluid preparations. This was a recommendation to the members of the succeeding committee to keep their eyes open on this proposal, which should be discouraged in the beginning.

Dr. Melville Black moved the adoption of the report. Seconded and carried.

Dr. C. A. Ferris moved that Dr. Henderson of Grand Junction be seated as a delegate from Mesa County.

Motion seconded by Dr. Chipman.

After discussion by several members, the motion was put to a vote and declared lost.

Dr. David A. Strickler, Chairman, presented the report of the Committee on Public Policy and Legislation as follows:

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

Your Committee on Public Policy and Legislation beg leave to report that the past year has been an exceedingly busy one for the medical men in general and for members of your committee in particular in connection with the supply of medical men for the Army and Navy, and in connection with the draft service. The work on publicity which was outlined in our report of a year ago was planned but not executed as we had hoped, but the noble response of the profession to the call of our country, and the knowledge of this response so generally distributed among the people has served the purpose of publicity in the interest of ethical medical practice to an extent not dreamed of by us when we last met. The splendid record made by the medical profession might, with definite benefit to questions of public health, be emphasized through the public print now and during the coming session of the legislature if, perchance, the really capable writers of your committee are not all in the service before the articles are written as has been the experience of the past year.

Nothing has been done in a legislative way as the legislature has not been in session. We strongly recommend that the Society while in session adopt and recommend such measures as may to it seem wise, so that the committee will have the necessary backing in presenting such measures to the legislature.

As in the past, one of the chief functions of your committee will be to oppose objectionable legislation.

Respectfully submitted,

DAVID A. STRICKLER, Chairman,
F. E. WALLACE.

Dr. Bortree moved that the report be adopted. Seconded and carried.

Fiftieth Anniversary of the Society.

Dr. Crisp stated that within two years the Colorado State Medical Society would have reached its fiftieth anniversary, and suggested that it would be appropriate to have a committee appointed to consider the medical history and medical literature of Colorado and present a report to the Society for action. Accordingly, he moved that such a committee be appointed with instructions to present such a report at the next annual meeting, so that the House of Delegates could take such action regarding the fiftieth anniversary as might be appropriate.

Motion seconded.

Dr. Melville Black moved to amend that Dr. Henry Sewall be made chairman of the committee. Seconded by Dr. Carmody.

After considerable discussion, Dr. C. A. Ferris moved that this whole matter be laid on the table.

Seconded and carried.

Dr. David A. Strickler, chairman of the committee appointed at a meeting of the Society on September 9, presented the following report:

COMMITTEE ON PROVISION FOR THE INSANE.

Your committee recommends the adoption of the following preambles and resolutions:

Whereas the condition relative to the prevention and treatment of mental diseases in the State of Colorado has been neglected to the almost complete exclusion of measures leading to such prevention, and the inadequacy of facilities for the treatment of acute and possibly recoverable types of mental disorders, and

Whereas the provision for the care and treatment in the state hospital has not been consistent with the ideals to be desired, owing to lack of sufficient appropriation for the establishment of the necessary laboratory study and treatment consistent with the progress of medical science in the alleviation of the condition of the insane, and

Whereas in view of the impending conflict, an appreciable increase of the number of mental afflictions may be anticipated; therefore, be it

Resolved that the Colorado State Medical Society, in annual convention assembled, urges the attention of the county medical societies and public to the necessity of radically improving the methods and facilities for the care, and especially for the treatment, of the acute and recoverable types of mental disease, and that appeal be made to the legislature for the establishment for this purpose of a psychopathic hospital at Denver under the direction of the Regents of the State University; and be it further

Resolved that there is an imperative demand for the enlargement of the State Home and Training School for Mental Defectives sufficient to provide for those detained in other institutions, as well as epileptics until such time as a colony for epileptic cases may be established; and be it further

Resolved that the Committee on Public Policy and Legislation be instructed to give their attention and endeavor to the securing of such legislation as will accomplish the improvements herein set forth at the next session of the state legislature.

Dr. Bortree moved that the recommendations of the committee be approved by the House of Delegates and recommended to the Society for adoption.

Seconded and carried.

Dr. Holmes moved that the Committee on Public Policy and Legislation be instructed to publish and circulate the paper of Dr. Moleen on insanity, read before the Society Monday afternoon, with the discussion thereon, but that names be omitted, and that the report be sent to the secretaries of the various county medical societies for distribution.

Seconded and carried.

Dr. C. F. Hegner reported for the special committee previously appointed to prepare a resolu-

tion appreciating the services of war members, as follows:

REPORT ON RESOLUTION CONCERNING WAR MEMBERS.

We recommend the following for adoption by the House of Delegates and the Society:

The Colorado State Medical Society, assembled at Estes Park in its forty-eighth annual meeting, hereby expresses its admiration of the spirit of patriotic self-sacrifice which has prompted such a large percentage of its members to leave their homes and practices in order to take part in the world struggle for freedom and democracy, and extends to the absent members its hearty good wishes for a safe and speedy return to civil life.

W. T. H. BAKER,
W. H. CRISP,
C. F. HEGNER.

Dr. Carmody moved that the resolution be approved and recommended to the Society for adoption.

Seconded and carried.

On motion of Dr. Bortree, the House of Delegates adjourned to meet at 8:30 a. m. Wednesday, September 11.

Fourth Meeting of the House of Delegates, September 11, 1918

The House of Delegates met at 8:30 a. m. and was called to order by the President.

The Secretary called the roll and the President announced a quorum present.

On motion of Dr. Bortree, Dr. H. R. Henderson, Grand Junction, was seated as a delegate.

The minutes of the previous meeting were read and approved.

The President stated that it occurred to him it would be proper for the House of Delegates to formally elect an acting secretary and acting treasurer as the present acting secretary and acting treasurer had been appointed for the interim.

Dr. Bortree moved that Dr. C. W. Maynard be nominated as acting secretary, and Dr. William H. Crisp as acting treasurer for the period of absence on war service of the secretary and treasurer respectively.

Seconded and carried.

Nominations.

The Secretary read the report of the Nominating Committee which had been submitted to the House at a previous session.

Dr. Melville Black moved that the Secretary be instructed to cast the unanimous ballot of the House of Delegates for the nominees proposed by the Nominating Committee.

Seconded by Dr. Bortree and carried.

The Secretary cast the ballot as instructed, and the nominees were declared duly elected.

Committee on Medical Literature.

Dr. Melville Black moved that the motion made by Dr. William H. Crisp at a previous meeting, but laid on the table, be now taken from the table.

Seconded and carried.

Dr. Black withdrew the amendment he had offered to Dr. Crisp's motion. The original motion was seconded and carried.

The President appointed on the Committee on Medical Literature called for by Dr. Crisp's motion Dr. Henry Sewall, Chairman, Dr. Walter A.

Jayne, Dr. G. A. Boyd, Dr. O. M. Gilbert, and Dr. C. D. Spivak, Secretary.

Committee on Emblem for Physicians' Automobiles.

Dr. J. C. Chipman moved that a committee of three be appointed to consider the matter of an emblem for physicians' automobiles and to report next year.

Seconded and carried.

The President appointed on this committee Dr. H. G. Wetherill, Chairman, Dr. J. J. Pattee, and Dr. J. W. Lehan.

Amendment to By-Laws.

Dr. W. T. H. Baker and Dr. Melville Black presented the following amendment to Chapter vii, Section 4, of the By-laws:

"The Officers shall be installed at the last general meeting of the annual session, except the President, who shall be installed at the first general meeting of the annual session following that at which he was elected." (To lie over until next year for action.)

Dr. G. A. Boyd read the report of the Committee on Appropriations, as follows:

REPORT OF COMMITTEE ON APPROPRIATIONS.

Your committee on Appropriations beg to make the following report:

Appropriations should be made as follows:

Colorado Medicine 843 members at \$2.00.	\$1,686.00
Editor	300.00
Incidentals and printing	250.00
Programs and postage	90.00
Public policy	150.00
Secretary's clerk	120.00
State library	150.00
Stenographer for the annual meeting....	250.00
Secretary	200.00
	<hr/>
	\$3,196.00

GEORGE A. BOYD
FRITZ LASSEN

Dr. Melville Black moved the adoption of the report.

Seconded and carried.

Dr. Melville Black moved that a vote of thanks be extended to the retiring officers for the efficient and faithful performance of their duties.

Seconded and carried.

Dr. Black also moved that a vote of thanks be extended to the management of the Hotel Stanley for the splendid manner in which they had taken care of the doctors, their wives and guests.

Seconded and carried.

Dr. J. C. Chipman moved that Denver be selected as the place for holding the next annual meeting, as recommended by the Nominating Committee.

Seconded and carried.

As there was no further business to come before the meeting, on motion, which was duly seconded and carried, the House of Delegates adjourned sine die.

C. W. MAYNARD,
Acting Secretary.

(The minutes of the general assembly of the Society will appear in the November issue of Colorado Medicine).

News Notes

(Continued from Page 247.)

Dr. Paul L. Leyda of Lafayette has received a captain's commission in the M. C. and is now at Fort Oglethorpe.

Dr. C. L. Miller of Swink has received a captaincy in the M. C. and is now in the service at Fort Riley.

Captain J. Wiley Jones, formerly of Denver, now overseas, was wounded in one of the recent actions at the front. In mid-September he was reported as having recovered and resumed his duties.

Dr. D. O. Norton of Fort Collins was commissioned in the M. C. and ordered to Fort Riley in September.

Dr. Guy C. Ashbaugh of Merino received a commission in the M. C. and left in September for Fort Riley.

Lieutenant E. K. Shelton of Antonio was ordered to Fort Oglethorpe in the early part of September.

Dr. Willard K. Hills of Colorado Springs has been commissioned a lieutenant in the M. C.

Dr. John Atcheson of Idaho Springs has been made a captain in the M. C. He left in the early part of September on orders to report at Fort Riley.

Lieutenant Roy L. Gleason of Wellington was ordered to Fort Riley in September.

Major George E. Orsborn of Denver is now in France.

It will be noted in Major Levy's letter, published in this issue of *Colorado Medicine*, that Dr. A. J. Markley of Denver is now a major, has returned to this country from Honolulu and is stationed at Camp Lewis in charge of a sanitary train.

In a letter dated September 15, Major Crum Epler stated that he had just been assigned to Evacuation Hospital No. Twenty-eight, Camp Sherman, Ohio.

The physicians of the Arkansas Valley have responded splendidly to the call to the service. Of the eligible men at Rocky Ford, Drs. S. H. Savage, B. B. Blotz, Franklin Blotz and Carey Pollock are, or have been in the service. At La Junta, Drs. A. L. Stubbs, H. E. Hall and E. Gard Edwards have responded and the other two men under fifty-five years of age and physically fit, Drs. E. W. Ragsdale and R. G. Hersom, expect to enlist in December.

Drs. Jeffery of Ordway, C. L. Miller of Swink, Lanning Likes and C. T. Knuckey of Lamar are also in the service.

Drs. Edwards and Savage, who held commissions in the Medical Reserve Corps, issued soon after its organization, were called early and both granted honorable discharges on account of physical disability after a short term of service.

Capt. James Melville Shields, M.C., of Grand Junction is now in Italy with the American Expeditionary Forces. He is attached to Base Hospital 102. This hospital unit was organized at the Tulane University, New Orleans, and financed by a patriotic lady of that city.

Major H. J. Maul and Captain Ray Drinkwater, both of Denver, arrived in Denver from the Philippines in the latter part of September.

Lieutenant H. S. Shafer of Denver is now at Camp Perry, Ohio.

Captain H. W. Wilcox of Denver is now at Camp McClellan, Alabama, on a base hospital staff.

Captain Philip Hillkowitz, writing to Colorado Medicine, September 27, says that he has left the Rockefeller Institute and is now located at Camp Wadsworth, S. C., as his first assignment for active duty. He further states that Dr. L. H. McKinnie of Colorado Springs, who has been stationed at that camp, is now a major and has been ordered to Camp Sherman, Chillicothe, Ohio.

Dr. George E. Mallet, a recent graduate of the

University of Colorado, has been commissioned in the M. C. and sent to Camp Greenleaf for training.

Major F. J. Cullen of Denver was reported in one of the casualty lists in the latter part of September as having been wounded in action on the western front.

According to a press report, Dr. T. D. Grannick of Denver, now at Fort Riley, has been given a captain's commission.

Major W. A. Jayne of Denver writes that he is now sanitary inspector and assistant departmental surgeon (an administrative and directory office) in Boston, and that he is assistant to a man he knew at Fort Logan years ago; also that he was never so well as now. His address is the Union Club of Boston.

Major F. H. McNaught of Denver, home on leave from Plattsburgh, where he was chief of the surgical division, has been assigned to duty in this federal district as examiner for the medical corps of the United States army. He relieves Captain H. G. Wetherill of this portion of his work. Captain Wetherill will continue to act as medical aide to the Governor and have the supervision of the medical affairs of the local and medical advisory boards.

Captain C. G. McEachern spent the period of September 27-October 1 at his home in Denver following the completion of his training at Fort Riley, where he was a member of the Italian Base Hospital Unit. He expected an immediate assignment to active duty upon his return to Fort Riley.

Dr. A. H. Peters of Colorado Springs has been given a commission as lieutenant in the M. C. with orders to report at Fort Riley.

Lieutenant H. S. Cooper of Denver left on September 30 to report at Fort Riley.

Major C. B. Ingraham of Denver is now overseas in the fighting line.

THE VOLUNTEER MEDICAL SERVICE CORPS.

Statement by Dr. Edward Jackson, Chairman of the Colorado State Executive Committee.

This organization is a movement toward medical preparedness. The rapid increase in the United States Army that is now going on will certainly exhaust its commissioned medical reserves in the next few months.

When the new troops are sent across the Atlantic for the final campaign to crush autocracy, they will need to take with them a very large proportion of the physicians of America who are able to give the military service required. This will leave the training camps, the hospitals, the physical examination work, and the medical care of almost a hundred million people to be looked after by a medical profession from which the physically fit, active, younger men, including two-fifths of the whole number, have been withdrawn.

This is the probable emergency to meet which the Volunteer Medical Service Corps has been organized. It is designed to put every competent physician in the country in direct contact with the heads of the medical corps of the Army and Navy and the Public Health Service; and in touch with state committees and their representatives in every part of the country. These seem to be the best available agencies through which the medical needs of the government services and of the civilian populations can be promptly perceived and understood; and the best method by which the available workers capable of meeting those needs can be known, and made available

for them with the least loss of time and the highest efficiency.

As stated in the circulars of information, the objects of the corps are: "1. Placing on record all medical men and women in the United States.

"2. Aiding Army, Navy and Public Health Service in supplying war medical needs.

"3. Providing the best civilian medical service possible.

"4. Giving recognition to all who record themselves either in Army, Navy, Public Health activities, or civilian service."

According to the rules of organization: "Every legally qualified physician holding the degree of doctor of medicine from a legally chartered medical school, without reference to age or physical disability, may apply for membership in the Volunteer Medical Service Corps, provided he is not already commissioned in the government service. Women physicians are eligible."

Method of election: "The members of the corps shall be graduates in medicine who are licensed to practice medicine in their respective states, who have made application for membership, who meet the qualification requirements that are now or shall from time to time be established by the Central Governing Board, who are eligible as under Article VII above, and who shall be elected to membership in the Corps by the Central Governing Board."

The first object of this organization is to render available for special public service trained physicians who are excluded by age, 55 years or over, or by physical disability from full service in the Army or Navy; the second, to bring into touch with the authorities at Washington those men (between 46 and 55) who might serve in the Medical Corps of the Army or the Navy, but have not yet seen it to be their duty to ask for commissions; so that if necessary these may be induced to enter service as the urgent need for their help arises; the third, to study the capabilities of and get in touch with that part of the medical profession of America which remains available to combat epidemics and serve the civilian population to the end that they be put in touch with the work they can do with the least possible delay or lost effort.

This organization has been characterized as "indefinite and indeterminate." It is indefinite and indeterminate in the same sense as any other movement the history of which is still to be made—that is going forward to its work, instead of looking back upon it. It is "superfluous" only to those who are blind to the situation it is intended to meet, or hostile to its purpose.

Such a movement offers a shining mark for the men who would rather criticize than do. The carping pessimist finds in it a chance to exhibit his peculiar brand of sarcasm. The man who secretly thinks we ought not to be at war with Germany can find fault with the organization or personnel of the Corps. It is planned to meet a future emergency. If that should not arise, if Germany should collapse in the next few months, unneeded preparation might be made to seem absurd. It is easy to say that some other plan might have been better. But the other way is not open to us; this one is. Let us do our bit.

OFFICIAL ANNOUNCEMENT CONCERNING THE VOLUNTEER MEDICAL SERVICE CORPS.

(An Appeal to Executive Committees and County Representatives of the Volunteer Medical Ser-

vice Corps, and State Committees of the Council of National Defense.)

No official or committeeman representing the Volunteer Medical Service Corps or the General Medical Board of the Council of National Defense is now authorized or has been authorized to favor any organized or unorganized method of coercion in inducing members of the medical profession to join the Medical Corps of the Army or Navy, or the Volunteer Medical Service Corps. Our committeemen are especially urged against favoring any movement that would threaten to impair a medical man's standing in his local, state or national society because he refused to enroll in the Army or Navy, or the Volunteer Medical Service Corps.

It must be made clear that the Volunteer Medical Service Corps is a volunteer organization which has for its object the enrollment and classification of the profession. Its members are entitled to wear insignia which will clearly indicate that they have offered their services to the government, when such services are needed. Patriotism cannot be created by coercion. It also must be made clear that the Volunteer Medical Service Corps has for its primary object furnishing its classification to the Army, the Navy, the Public Health Service, the Red Cross and Provost Marshal, as well as to civilian institutions and communities, as a guide in providing for their needs to the best advantage.

The object of the Corps is not to disturb any medical man in the performance of any duty to which he has been assigned by any governmental agency either for service at the front or at home.

(Signed) EDWARD P. DAVIS, President,
Volunteer Medical Service Corps.
FRANKLIN MARTIN, Chairman,
General Medical Board, Council
of National Defense.

From a series of Questions and Answers furnished by the Volunteer Medical Service Corps, the following are selected (for economy of space) as containing matter which may be new to most of our readers:

10. If members of the Corps are recommended for active military or naval service, in what order will they be recommended?

(a) Physicians under fifty-five years of age without dependents and without physical disabilities which are disqualifying will first be recommended. Following this group, physicians under fifty-five years of age without obvious physical disabilities which are disqualifying and with not more than one dependent in addition to self (Class 1 of the Volunteer Medical Service Corps) will be among the first to be recommended for actual war service. Any physician under fifty-five years of age who is without an obvious physical disability which is disqualifying and whose dependents have an income sufficient for the support of dependents other than that derived from the practice of his profession, may be recommended to enroll in the Medical Reserve Corps of the Army, the Naval Reserve Force or the United States Public Health Service when in the opinion of the respective Surgeon Generals his services are needed.

(b) Physicians under fifty-five years of age without obvious physical disabilities which are disqualifying and with not more than three dependents in addition to self (Class II of the Volunteer Medical Service Corps) will be the next group to be recommended to apply for active military or naval service.

(c) The next group recommended to enroll for active duty with the Army, Navy or Public Health Service, (Class III) will be physicians under fifty years of age who are without obvious physical disabilities which are disqualifying and with more than three dependents in addition to self.

11. What are the exceptions in these groups?

The exceptions in the above groups of physicians are as follows:

- (a) Those essential to communities.
- (b) Those essential to medical schools and hospitals.
- (c) Those essential to health departments.
- (d) Those essential to industries.
- (e) Those essential to local and medical advisory boards.

12. How will exceptions to these groups be determined?

(a) Essential community need will be determined by the Central Governing Board on recommendation of representatives of the Central Governing Board appointed by the Board to make a survey of local conditions.

(b) Essential institutional need will be established after conference between representatives of the Central Governing Board of the Volunteer Medical Service Corps and representatives appointed by the governing bodies of the institutions concerned.

(c) Essential health department need will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and representatives of health departments.

(d) Essential industrial need will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and accredited representatives of industries involved.

(e) Essential local and medical advisory board needs will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and representatives of the Provost Marshal General's Office.

13. When will physicians who are not classified for actual military or naval service be requested to perform service?

When the emergency arises the following may be requested to perform duties in accordance with their qualifications and expressed merits as indicated by the information contained on their application blanks:

- (a) Physicians over fifty-five years of age.
- (b) Physicians with obvious physical disabilities which are disqualifying.
- (c) Those rejected for all government service because of physical disability.

14. What are some of the duties that this last group of physicians ineligible for active military service may be requested to perform?

(a) Deducting those members of the medical profession who will eventually be in active military, naval or public health service, fully seventy-five per cent of the remainder will be encouraged to continue at their home duties.

(b) Some of these may be called upon to supplement their private practices by performing part time service to meet community needs, hitherto performed by men called to active duty.

(c) Twenty-five per cent of those not actually engaged in war service (possibly 20,000 in number) who are now engaged in home duties but who have agreed to do work of any kind, anywhere, upon request of the Central Governing

Board, will as the emergency arises be recommended for duty in the following places:

1. Local and medical advisory boards.
2. Medical Schools and Hospitals.
3. Industrial plants.
4. Health Departments.
5. Communities lacking medical service.

15. How does enrollment in this Corps differ from actual conscription?

The Volunteer Medical Service Corps is exactly what its name indicates. It is a gentleman's agreement on the part of the civilian doctors of the United States who have not yet been commissioned in the Army or Navy or enrolled in the Public Health Service, or in the service of the Provost Marshal General, and a representative board consisting of government officials associated with lay members of the profession in which the civilian physicians agree to offer their services to the Government if requested to do so by the Central Governing Board.

18. Will enrollment in the Volunteer Medical Service Corps excuse a physician in the draft age from registration under the Selective Service Law or from being classified therein?

Positively not.

Organization of Volunteer Medical Service Corps in Colorado.

The Central Governing Board of the Volunteer Medical Service Corps of the Council of National Defense announces that the Colorado State Executive Committee of the Volunteer Medical Service Corps is comprised of the following doctors:

Edward Jackson, chairman, Majestic building, Denver.

Leonard Freeman, secretary, Metropolitan building, Denver.

Henry Sewall, Majestic building, Denver.

H. R. Bull, Grand Junction.

O. M. Gilbert, Physicians' building, Denver.

R. W. Corwin, Minnequa Hospital, Pueblo.

David A. Strickler, Empire building, Denver.

The purpose of this committee is to co-operate with the Central Governing Board in prosecuting all activities pertaining to the mobilization and enrollment of members of the Volunteer Medical Service Corps throughout the state.

The Central Governing Board of the Volunteer Medical Service Corps also authorizes the appointment of one county representative in each county in every state of the Union. The county representatives for Colorado are as follows:

Adams County—A. M. Moore, Brighton.

Arapahoe County—C. C. Fowler, Littleton.

Archuleta County—A. J. Nossoman, Pagosa Springs.

Bent County—G. H. Barber, Las Animas.

Boulder County—O. M. Gilbert, Boulder.

Chaffee County—F. A. Jackson, Salida.

Cheyenne County—H. C. Homer, Cheyenne Wells.

Clear Creek County—A. Ashbaugh, Idaho Springs.

Conejos County—C. A. Davlin, Alamosa.

Custer County—W. T. Butterbaugh, Westcliffe.

Delta County—H. A. Smith, Delta.

Denver County—S. B. Childs, Denver; Edward Delehanty, Denver; C. N. Meader, Denver; Gilchrist Smith, Denver; C. E. Tennant, Denver.

Douglas County—W. A. Palmer, Castle Rock.

Eagle County—E. E. Kennedy, Denver.

Elbert County—J. S. Rogers, Kiowa.

El Paso County—H. C. Moses, Colorado Springs.

Fremont County—R. E. Holmes, Cañon City.

Garfield County—W. W. Crook, Glenwood Springs.

Gilpin County—C. M. Froid, Blackhawk.

Gunnison County—N. McIntosh, Gunnison.

Hinsdale County—B. F. Cummings, Lake City.

Huerfano County—A. L. Trout, Walsenburg.

Jackson County—.....

Jefferson County—J. P. Kelly, Golden.

Kiowa County—.....

Kit Carson County—F. L. Beyer, Burlington.

Lake County—R. J. McDonald, Leadville.

La Plata County—John Haggart, Durango.

Larimer County—J. P. McHugh, Fort Collins.

Las Animas County—C. O. McClure, Starkville.

Lincoln County—L. J. Parker, Hugo.

Logan County—J. C. Chipman, Sterling.

Mesa County—H. H. Bull, Grand Junction.

Mineral County—S. McKibben, Creede.

Moffat County—J. E. Downes, Craig.

Montrose County—Fred Schermerhorn, Montrose.

Morgan County—F. W. Lockwood, Fort Morgan.

Otero County—Frank Finney, La Junta.

Ouray County—W. W. Rowan, Ouray.

Park County—Chas. K. Osborne, Como.

Phillips County—.....

Pitkin County—W. H. Twining, Aspen.

Prowers County—N. M. Burnett, Lamar.

Pueblo County—Wm. Senger, Pueblo; R. W. Corwin, Pueblo; C. W. Thompson, Pueblo.

Rio Blanco County—Samuel French, Meeker.

Rio Grande County—John McFadzean, Del Norte.

Routt County—E. L. Morrow, Oak Creek.

Saguache County—O. P. Shippey, Saguache.

San Miguel County—F. G. Klotz, Telluride.

Summit County—J. F. Condon, Breckenridge.

Teller County—W. W. King, Cripple Creek.

Washington County—E. A. Clark, Akron.

Weld County—Ella Mead, Greeley.

Yuma County—J. E. Cavey, Yuma.

Empty Envelopes Mailed.

Through some error, a large number of envelopes mailed from Washington to Colorado physicians, which should have contained application blanks for the Volunteer Medical Service Corps, were sent out empty. This will prevent a prompt general response on the part of the profession in this state unless the Colorado doctors take the initiative in the matter. Every one who has not received such blanks can do something for the honor of the state by writing at once to the Volunteer Medical Service Corps, Council of National Defense, Washington, D. C., asking for information and blanks, and by using the same as soon as he or she receives them.

EDWARD JACKSON,
State Chairman.

Medical Societies

CITY AND COUNTY OF DENVER.

The regular business meeting of the Medical Society of the City and County of Denver was held the evening of September 3, 1918. President Moleen was in the chair.

An interesting talk was given by Dr. Sol. Kahn, president of the Salt Lake Medical Society. Dr. Leo Tippley was elected to membership in the Society.

Letters were read by the secretary from J. S. Johnston, adjutant general, Washington, D. C.,

acknowledging the receipt of the resolutions which were adopted by the Society regarding the appointment of women physicians to the Medical Officers' Reserve Corps; and from Dr. L. C. Peter, Secretary of the American Academy of Ophthalmology and Oto-laryngology, Buffalo, N. Y., conveying a vote of thanks to those who served on the entertainment committees and expressing appreciation of the many courtesies extended to the Academy and its members during the recent meeting of the Academy held in Denver.

There was an announcement of a lecture to be given by Dr. E. V. McCollum of Johns Hopkins University, on September 4.

Dr. O. S. Fowler gave an interesting case report, with the x-ray plates of a man who had been operated upon for supposed appendicitis with no relief. The x-ray pictures, taken one year later, showed a positive kinking of the ureters. He said an operation of anchoring the kidney by fascia lata gave entire relief.

The scientific program of the evening was given by Dr. Edward Jackson on the subject of "War Injuries Involving Sight". He called attention to injuries of the eye and visual tracts that have been of such frequency and importance in the present war and that offer many points of interest to those of the medical profession who are not engaged in ophthalmic practice. The main points touched upon are referred to elsewhere. (See p. 000). These were illustrated by plates from the atlas of LaGrange of Bordeaux, shown by means of the balopticon. This atlas contains one hundred plates, of which twenty are in colors, with reports of the cases that have been watched in the military hospitals during the earlier years of the war. Many of these cases are also illustrated with diagrams that indicate the track of the missile causing the injury, which was often entirely outside the orbit.

Two pictures were also shown representing the ophthalmoscopic appearances of cases recently reported to the American Ophthalmological Society, in which the injuries had occurred in civil life. One of these showed general thrombosis of the choroidal vessels following a blow on the eye from a chip of wood. The second showed the appearances following the partial or complete tearing of the eyeball away from the optic nerve by the patient's being knocked down and injured by a cow. The visible vessels of the choroid and retina offer the best possible field for studying the vascular lesions produced by injury.

MARY R. STRATTON,
Reporter.

The regular meeting of the Medical Society of the City and County of Denver was held September 17, 1918. President Moleen presided.

Dr. Charles Sidney Bluemel and Dr. John Samuel Bouslog were elected to membership.

Dr. Moleen asked all those knowing the addresses of physicians in the service to give them to the librarian.

The scientific program began with a paper of interest by Dr. F. C. Buchtel on "The Use of the Cautery", which will be published in Colorado Medicine. It was discussed by Dr. T. E. Carmody.

Dr. T. E. Carmody gave an interesting demonstration of the instruments used in removing foreign bodies from the oesophagus and bronchi and showed some foreign bodies which he had removed. He also gave an interesting talk on some of his recent endoscopic cases.

Dr. G. M. Blickensderfer was appointed to take

the place on the Board of Directors made vacant by Dr. Philip Hillkowitz's entering the service.

MARY R. STRATTON,
Reporter.

Book Reviews

Medical War Manual No. 6: Laboratory Methods. Compiled by the Division of Infectious Diseases and Laboratories. Illustrated. Lea and Febiger, Philadelphia and New York. 1918. Price \$1.50.

This valuable little book, while intended for the army laboratory worker, may well be utilized in civil life. It contains many useful hints and methods of examinations not found in standard text books and covers fields of research based on the very latest investigations.

The manual deals with (1) The collection and shipment of specimens and materials such as sputum, urine, blood, etc., and the proper taking of cultures; (2) The preparation of solutions and stains in pathologic and bacteriologic work. Under this head are given detailed directions for the preparation of Dakin's solutions, dichloramin and chloramin-T paste; (3) Routine methods of examining urine, blood, feces, etc.; (4) The technic of preparing histologic sections. Concise directions are given for carrying out various serologic reactions; (5) Quantitative analytical methods for urine, blood, etc.; (6) General and special bacteriologic methods—the preparation of media and the culturing of infectious microorganisms, particularly of typhoid, pneumonia and meningitis; (7) Sanitary examination of milk, water and sewage.

It is remarkable what a wealth of information is compressed in the two hundred and fifty six pages of this little book, which, like its companion manuals, is bound in a small compass.

With a view to the particular needs of the army laboratory stress is laid on the detection of typhoid and meningococcus carriers and the methods of typing the pneumonia groups.

The haste with which the manual was compiled has necessarily left room for some improvements and corrections. It is unfortunate, for example, that the groupings for blood transfusion do not correspond with the Moss classification which is the standard in use in most laboratories.

For army laboratories where determinations are carried out for the most part according to prescribed forms, this manual will be found an indispensable addition to the library. P. H.

Diseases of the Male Urethra. By Irvin S. Koll, M. D., Professor of Genito-Urinary Diseases, Post-Graduate Medical School and Hospital, Chicago, Octavo of 151 pages, with 123 illustrations, several in colors. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$3.00 net.

The author first deals with gonorrhea, then with other pathologic processes in the urethra, prostate, vesicle, vas and epididymus. The subjects are tersely treated, effort being directed toward conciseness, clearness and simplicity. Attention is called to the author's personal experience as being responsible for the views expressed on the subjects of Biologic Chemistry of the Gonococcus, and Studies on Spermatogenesis, and he states that they may be looked upon by others as reactionary. He seems to have confined his statements throughout the book largely to what

his own observations have taught him.

Of the many illustrations, a number are colored plates showing endoscopic views of the diseased urethral mucosa.

R. G. S.

Local and Regional Anesthesia, including Analgesia. By Carroll W. Allen, M. D., of Tulane University, New Orleans; with an Introduction by Rudolph Matas, M. D., of Tulane University, New Orleans. Second Edition, Reset. Octavo of 674 Pages with 260 Illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$6.50 net.

This, the latest volume on the subject, supplies a real want in English surgical literature. Gathering from many sources the best there is on the subject and adding a wealth of personal experiences, it combines in convenient and excellent form the essence of all the most successful methods of local anesthesia.

The pride that Dr. Rudolph Matas expresses is more than justified by the excellence of Dr. Carroll W. Allen's work.

Every active, progressive surgeon should have this edition in his library. It will be a stimulus to him in his work and an indispensable reference in local anesthesia.

Local anesthesia has come to stay. The operations in which it is not only applicable but often the method of choice are ever increasing.

To be successfully used, local anesthesia must be understood. This understanding can readily be had with little effort and time in the study of the absorbingly interesting chapters on special operations.

The chapter on pain is well worth the price of the book and is only an index of the attractive style of the following pages.

The chapter on technic covers the various methods and forcibly impresses one with the fact that the successful use of local anesthesia requires a fore-knowledge of the finer anatomical details of the region which is the site of the proposed operation, more delicacy and refinement of technic, and greater consideration of the tissues and of the individual than usually obtain when the same operation is done under general anesthesia. These conditions all tend to a surgical uplift that has been long delayed.

To fully appreciate the rapidly broadening field of local anesthesia in contrast to general narcosis one need but superficially peruse the chapters on The Thorax and Back, The Abdomen, and Genito-Urinary, Rectal and Gynecologic Operations.

The organs of special sense and dental anesthesia are also considered in detail.

C. F. H.

Radiography and Radio-Therapeutics, by Robert Knox, M. D., M. R. C. S., L. R. C. P.; Consulting Radiologist Great Northern Central Hospital, London; Hon. Radiographer, King's College Hospital, London, etc. Volume I, seventy-eight plates and three hundred and thirty-seven illustrations in the text; Volume II, fifteen plates and one hundred illustrations in the text. The Macmillan Company, New York. A. C. Black, Ltd., London. Price, \$9.00 per volume.

Volume one deals with roentgenography and volume two with therapeutics by radium and the roentgen ray. The entire field of roentgenology is considered the subjects of related physics and apparatus being gone into very thoroughly. Technic, therapeutic and roentgenographic, and the consideration of therapeutic possibilities and results occupy a considerable portion of the work.

It is to be regretted that in an undertaking so

exhaustive in scope it became necessary to concentrate the material in order to come within limited space. Many subjects are of necessity only touched upon, so that the roentgenologist, who is apt to desire a rather exhaustive handling of a given topic, will be disappointed in many instances in referring to his "Knox".

As an example of the rather too cursory way in which some topics are handled, tuberculosis of the lungs is "covered" in three and one-half pages; and the whole subject of diseases and tumors of the chest—lungs, pleurae, heart, vessels and mediastinum—in twenty-four pages.

English apparatus and technic vary considerably from the American.

The books' best sphere of usefulness will be as a comprehensive but brief survey of roentgenology and radiology for the general practitioner and surgeon, and as a handy reminder for the roentgenologist.

The paper, print and illustrations are very good, the plates, in fact, constituting one of the best features of the work. The price seems out of proportion with other works on the same plane.

In the introduction to Volume II an interesting account is given of recent experimental investigation of the effects of radiation on the normal blood and tissues of the body. Secondary radiations are known to be given off from metals exposed to the harder rays and the theory is advanced that the iron constituent of the red cells becomes charged and in its circulation over the body furnishes secondary radiations which may account for the improvement in the patient's general condition so often seen as incidental to x-ray treatment applied locally to produce local results.

F. B. S.

The Medical Clinics of North America, Volume 1, Number 6. (The Southern Number, May, 1918). Octavo of 224 Pages, 35 Illustrations. Philadelphia and London; W. B. Saunders Company, 1918. Published Bi-Monthly. Price per year: Paper, \$10.00; Cloth, \$14.00.

The high reputation of this publication is being maintained by the plan of providing the contributions of each number from various sections of the country. The style of presentation of the subjects varies from the brief case report to the systematic treatment of the condition involved. Brevity and compactness prevail and a large number of interesting conditions are discussed in a practical manner.

Dr. J. B. McElroy, in the opening chapter, gives a workable classification of the nephropathies based upon the newer knowledge of these conditions which has many advantages from a diagnostic, prognostic and therapeutic standpoint. Dr. George S. Bel follows with an interesting discussion on "The Comparison of the Essential Pneumonias From the Standpoint of Their Clinical Significance". He also presents a most unusual case of typhoid fever complicated with purulent typhoidal meningitis and having no intestinal lesions.

"Artificial Pneumothorax (Forlanini); Its Application to the Arrest or Cure of Pulmonary Tuberculosis" is handled in a masterly manner by Dr. Charles L. Minor, who gives a complete description of technic, complications, and how to meet them, also the management of cases. Dr. Bryce W. Fontaine's contribution on "Syphilitic Fever" with case reports, deserves mention. A most valuable contribution on "Malaria" is presented in an expert manner by Dr. C. C. Bass, who is so thoroughly qualified to discuss this subject. Dr. J. Ross Snyder's clinic on "Pellagra" throws

some instructive light upon the cause of this vague disease.

"Hodgkin's Disease" and "Reflex Gastropasm" with case reports are well discussed by Dr. J. Heyward Gibbs. The case of "Gonococemia" of Dr. Robert Wilson is interesting. The clinics of Dr. James E. Paullin on "Myocardial Infarct Following Coronary Sclerosis" and that of Dr. John P. Munroe on "Severe Headaches" are exceedingly instructive.

There is a large amount of excellent material in the "Southern" number. J. L. M.

A Diabetic Manual for the Mutual Use of Doctor and Patient. By Elliott P. Joslin, M. D., Assistant Professor of Medicine, Harvard Medical School; Consulting Physician, Boston City Hospital; etc. Illustrated. Lea and Febiger, Philadelphia and New York. 1918. Price, \$1.75.

This manual is arranged in four parts. Part I is a "diabetic primer" which gives in untechnical language a rapid survey of the whole subject. Part II covers the general field in a more technical and detailed way and contains an outline of the author's treatment of severe cases as given in full in a previous publication. Part III contains diet tables and recipes. Part IV gives descriptions of the "simplest tests which a physician can employ for the estimation of sugar and acid bodies in the urine, the sugar in the blood and the carbon dioxide in the alveolar air".

A dominating opinion of the author is that the patient should be taught the nature of his disease and how to conquer it, since the treatment lasts through life. For this purpose, a sort of catechism consisting of twenty questions and answers is provided to acquaint him with the essential physiology and diabetic pathology, and in addition he is required to learn how to make the urine sugar test, to serve his food, to know what to do if threatened with acid poisoning, etc.

I regard this as a most valuable and practical guide in the handling of diabetics. A most praiseworthy feature of the book is the provision by which patient and doctor can work in harmony throughout the course of the disease.

T. R. L.

"Female Weakness Cures". Prepared and issued by the Propaganda Department of the Journal of the American Medical Association, Chicago.

This excellent exposure of the patent medicine faker whose activities are applied to the ailments of women is a sixty-two page pamphlet. It throws the search light on such dishonest concerns as the Viavi Company, the Bertha C. Day Company, and Mrs. Cora B. Miller. Among the interesting photographic reproductions of the advertising material used by these concerns are included a photographic reproduction of a page of regular reading matter in which that grandmother of periodical literature, Leslie's Weekly, no doubt for a consideration, published an extravagant puff of Viavi, and a notice of an illustrated talk on "Science of True Living", given in a prominent church, whose Ladies' Aid Society was to receive ten cents for every woman who attended the "free" lecture.

Women Urged to Enter the Volunteer Medical Service Corps.

In an appeal addressed to women physicians under the above caption, Dr. Emma Whert Gillmore, chairman Committee of Women Physicians, Gen-

eral Medical Board, Council of National Defense, says:

"During the last week in August application blanks for the Volunteer Medical Service Corps were mailed in franked envelopes to all legally qualified men and women in the United States who were not already in government service. Presumably a number of women have been overlooked because many of them are not members of medical societies, but this will speedily be corrected if a notification of the omission is sent to the Volunteer Medical Service Corps, Council of National Defense, Washington, D. C.

"Meanwhile, medical women who possess a vision will see in the Volunteer Medical Service Corps an incomparable method of organization which will register their qualifications and place them in an identical coded class system with men physicians. This corps is in reality an ideal procedure for mobilizing the military forces of our country for selective medical war service. Incidentally it will place loyal and patriotic medical women by the side of those men who are willing to give themselves. Even though all of them are not elected to membership, their names will be on file with the government as willing to serve as far as their strength and capability will permit, and no one can point a finger at them and say 'slacker'."

THE COLORADO STATE MEDICAL SOCIETY. OFFICERS, 1918-1919.

(Incorporated November 1, 1888.)

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Crowley County, second Tuesday of each month; E. O. McCleary, Ordway.

Delta County, last Friday of each month; A. F. Erich, Paonia.

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Editorial Comment

THE NEW PATHOLOGY OF SYPHILIS.

Until the discovery of the spirocheta pallida fifteen years ago, our knowledge of syphilis was decidedly primitive and uncertain. Although Virchow in 1858 put forward a new distinction between certain simple inflammatory lesions and the gummatous lesions of syphilis, syphilology continued for another half century to regard the gumma as the one specific histopathologic lesion of the disease.

Even within the last few years, careful workers reported finding anatomic evidence of syphilis in not more than six and a half per cent of autopsies. This was in material from a great New York hospital whose patients are derived chiefly from the poorer classes where a large incidence of syphilis would naturally be expected. Warthin*, working in the university hospitals at Ann Arbor, Michigan, in which the clinical material is chiefly drawn from the rural population of the state, is now able to offer convincing anatomic evidence of syphilitic infection in 300 out of 750 bodies brought to autopsy, or in forty per cent of the entire autopsy material.

Warthin attributes this striking variation in percentages to the difference between the pathologic criteria which were employed by himself and those relied upon in previous investigations. The earlier anatomic diagnoses had nothing to do with the spirochete, but were based chiefly upon the gross pathologic anatomy of pre-spirochete days, that is upon the actual finding either of gummata or of cicatricial conditions sec-

ondary to gummata. Warthin, on the other hand, declares that the essential tissue-lesion of either later or latent syphilis is an irritative or inflammatory process, usually mild in degree, characterized by lymphocytic and plasma-cell infiltrations in the stroma particularly about the blood vessels and lymphatics, slight tissue proliferations, eventually fibrosis, and atrophy or degeneration of the parenchyma. He speaks of the gumma as a relatively rare formation, and states that the great majority of cases of syphilis run their course without the formation of gummatous granulomata. These mild inflammatory reactions are due to the localization in the tissues of relatively avirulent spirochetes.

This mild irritation or inflammatory syphilitic lesion was first studied in congenital syphilis, where important facts were disclosed concerning the incidence of the spirochete in the heart muscle. In cases of acquired syphilis, it was not possible to demonstrate the presence of spirochetes so readily or in such a large proportion of cases as in the congenital form of the disease, since the spirochetes were present in smaller numbers and were more widely scattered. The specific inflammatory lesions of spirochete localization were found in the myo-, endo-, and pericardium, the aorta, the pulmonary and other large arteries, the nervous system, the liver, pancreas, adrenals, testis, prostate, and the prevertebral and mesenteric tissues. The lesions varied greatly in size, from minute collections of few cells to larger infiltrations just visible to the naked eye; and every stage of development to complete healing and fibrosis was observed. Complete healing throughout the body was never observed.

*American Journal of Syphilis.

In the detailed discussion of the microscopic pathology of latent syphilis, organ by organ, numerous interesting facts are brought out, and some problems are enunciated. Focal perivascular infiltrations of lymphocytes and plasma cells were found in the brain and spinal cord in cases not clinically regarded as paresis or tabes. The relation of these infiltrations to paresis and tabes may be simply one of degree, so that it is possible to think of every case of syphilis as being, at least in slight degree, parietic or tabetic. In every case of syphilis the heart showed microscopic lesions characteristic of spirochete localization. The determination of cardiac syphilis is essentially microscopic, the most extensive lesions being sometimes present when no myocardial changes can be seen by the eye. Warthin declares that the "fibroid" heart is the ultimate outcome of all cases of latent syphilis, the final clinical picture in such cases being that of an insufficient heart, a heart which cannot do its work properly. All the cases of angina pectoris studied were syphilitic. The aorta when examined microscopically showed in every case of old syphilis characteristic syphilitic infiltrations in the media and adventitia. The absence of gross appearances of syphilitic aortitis does not exclude the presence of active syphilis of the aorta. While not venturing to assert that diabetes is the result of syphilis, Warthin remarks that syphilis is the most common cause of interstitial pancreatitis; and in eleven out of his twelve cases of diabetes coming to autopsy the heart, aorta, pancreas, adrenals, in the male the testes, and other tissues showed the characteristic plasma-cell infiltrations and fibrosis of latent syphilis.

It is worth while noting that the lesions of active syphilis which he describes were found not merely in known active cases of late syphilis, but also in cases with a history of syphilis treated and regarded as cured, in cases with negative and cases with positive Wassermann reaction; and in the great majority of autopsies, in the bodies of those who had given no history of syphilis and showed no clinical signs or symptoms interpreted by the clinician as indicating the

presence of the disease. He places the incidence of syphilitic infection in this country as nearer thirty per cent than the five to fifteen per cent given by other writers, and suggests that at a very low estimate about one-tenth of all the deaths occurring in the United States can be attributed to syphilis. Pathologically, he has never seen a cured case of syphilis. He suggests the possibility that, in cases without symptoms and with a negative Wassermann reaction, the spirochete may cease to be a cause of disease and the body thus become a carrier of relatively or even completely harmless syphilitic organisms.

"The syphilitic is pathologically 'damaged goods'; and the damage is a progressive one. He wears out sooner, his viscera more quickly reach their histogenetic limits, he actually becomes prematurely old, and there is a constant strain upon his defensive powers. All these are arguments for the prevention of syphilitic infection rather than for its cure. No man can acquire syphilis, become clinically cured, which as far as we know means latency of the infection, that is spirochete carrying, and have the same potential body value and expectancy of life as before infection."

THE ETIOLOGY OF SPANISH INFLUENZA.

The abundance of our ignorance concerning disease has been beautifully demonstrated by the epidemic of so-called Spanish influenza. For the army of bacteria there has seemed to be neither a western front nor an eastern front of effective resistance. Since the first ravages of the disease were reported from the fighting line and from the Spanish capital last spring, the epidemic has become a pandemic, spreading probably to every civilized region which has maintained social and commercial intercourse with the European centers of origin. Although the death rate has remained low in proportion to the incidence of the disease, there has been a very real increase above the normal mortality. In this country, basing the figures upon an annual rate per thousand inhabitants, the mor-

tality in Philadelphia for the last week in October rose from the normal average of 13.4 to 109.3; that of Washington, D. C., from 14.7 to 71.3; that of San Francisco from 14.2 to 77.2; that of New York City from 11.9 to 61.6; and that of New Orleans from 18.8 to 120.1. Denver, which for the week in question showed probably about an average of the cities of the country, had an increase of mortality from 12.2 to 42.2.

When this pandemic is over, what additional knowledge shall we have gained that will aid us to fight any similar visitation? There has been on the whole a rather striking lack of agreement between different observers as to the bacteriological basis of the disease. Some have claimed that they were able to find Pfeiffer's bacillus in a large proportion of their cases. But this was not the general experience. Discussing the name "influenza", Scheel argues that there is no reason for interfering with the use of this expression, which has been applied to similar epidemics since very early times; but that we have very good reason for separating this denomination from the Pfeiffer bacillus. Doubt is very freely expressed as to the accuracy of Pfeiffer's claim, a quarter of a century ago, that his bacillus was specifically associated with influenza.

The bacteria most commonly reported belong to the pneumococcus-streptococcus group. It is likely that the final reports of investigators in this country who have had access to large series of cases will constitute a really valuable mass of evidence for careful classification and balanced conclusions.

A methodical bacteriological study of the influenza epidemic in Denmark was carried out in July and August last by Bie, Christiansen, and Schwensen, on the basis of 346 influenza patients admitted to a large hospital in Copenhagen. Of this total number 200 developed pneumonia. The bronchopneumonic disturbance in these cases was much more extensive in character than that ordinarily observed as a complication of influenza. Death occurred in only 13 cases, in a number of which there was a contributory cause for the fatal outcome. Neither in

stained smears nor by incubation upon Petri dishes containing blood agar was it possible to demonstrate the presence of the Pfeiffer bacillus, but in the sputum of 48 cases examined, whether pneumonia was present or not, there was found the pneumococcus or a diplococcus related to the pneumococcus, sometimes in pure culture, and sometimes as the predominating bacterium; and this diplococcus is regarded by the authors named as being the causative factor both in the uncomplicated disease and in the complicating pneumonia. Special experiments clearly demonstrated the presence of the pneumococcus in the sputum before the patients had come into contact with the other inmates of the hospital.

The pneumococcus was found in pure culture in five out of six complicating empyemas, and in the other case pneumococci were abundantly present. Similar findings were established as regards a number of other Copenhagen hospitals. The pneumococcus was more frequently found in pure culture in uncomplicated influenza than in the bronchopneumonias.

The apparent conflict between the findings of Bie, Christiansen, and Schwensen and those of writers who have regarded the streptococcus as the germ responsible for the influenza epidemic is in all probability merely another demonstration of the essentially homologous character of the pneumococcus and the streptococcus, and of the marvelous mutability of this whole group of bacteria. With changes in climatic and other conditions, it is entirely practical to believe that the virulent organism which has traveled so rapidly from state to state and from continent to continent has been almost as protean in its form and morphological reactions as in its pathological influence upon the human body.

THE BUREAU OF TUBERCULOSIS IN FRANCE.

In those happier days to come, when the civilized nations of the world shall have turned "their swords into ploughshares and their spears into pruning hooks", American intervention in the great war will be remem-

bered increasingly for other things than those more directly pertaining to the battle line. Fifty years from now it may well be that the greatest monument to the United States in France will persist in the form of a more efficient control of the tuberculosis problem. It is doubtful whether any greater experiment in philanthropy was ever developed than the cooperative undertakings of the Rockefeller Foundation and the American Red Cross in the fight against the great white plague among the French people.

A somewhat detailed but compact review of this work, from the standpoint of the Bureau of Tuberculosis in France of the American Red Cross is given by William Charles White, Chief of Bureau, in the *American Journal of the Medical Sciences* (volume 156, page 415). Before the war, some institutions for the care of the tuberculous had already been established or were being established in France. Among these was the Bligny Sanatorium near Paris, on which the work under construction at the opening of the war contemplated provision for a total of about five hundred and fifty patients. But as the result of the withdrawal of workmen for military purposes, the uncompleted structure became damaged by wind and weather and suffered from slow disintegration. This and other institutions in which the antituberculosis work has been limited or stopped by the industrial and financial limitations of war were either taken over or assisted by the Red Cross bureau.

In seven sets of barracks which had been provided by the Assistance Publique for completely discharged soldiers, the conditions were such that from lack of food and insufficient equipment the patients would not remain for any length of time. Thus of 1052 beds available only 174 were occupied. To remedy this condition of affairs, the Bureau created a special division under Mademoiselle Noufflard, a French woman whose services at the front had won for her the Croix de Guerre. By providing diet kitchens, recreation rooms, additional clothing and a few comforts of the less material sort, the number of tuberculous patients in the barracks was rapidly increased from 174 to 657; and Mademoiselle Noufflard was

further able to influence beneficially the whole tuberculosis policy of the Assistance Publique. Outside of Paris a number of existing French institutions for the care of tuberculous patients were helped to continue their work, at a cost to the American Red Cross of about one hundred thousand francs a month. The assistance thus given was used as a basis for obtaining accurate knowledge which could be used in planning further constructive work. For the care of tuberculous soldiers, a credit of two million francs established by the Department of the Interior in 1915 was increased to five million francs in 1917.

During the time of emergency it had been possible for the French to do very little for the tuberculous members of the civil, repatriated, and refugee population. To cover this field, the Bureau of Tuberculosis undertook to establish, upon property furnished by a private benefactor through the Department of the Seine, an elaborate series of institutions in which will ultimately be cared for two thousand persons in whom tuberculosis is a common factor, and to which collectively the name of Edward L. Trudeau is appropriately to be given, "both to honor the greatest American physician in the tuberculosis world and to bring about a feeling of unity between the two countries based upon Dr. Trudeau's French origin". Upon this property, when the scheme is completed, will be a sanatorium for women, a detention house for entering children, a hospital for tuberculous children, a preventorium for children of tuberculous parents, and a colony for families with a tuberculous member from which the sick one cannot be separated.

As early as December last a need was felt for an institution to deal with cases of tuberculosis developed in the soldiers of the American army after landing in Europe. The Bureau of Tuberculosis has therefore undertaken, by agreement with the medical division of the army, to provide as soon as possible near Bordeaux a hospital which will be turned over to the army for its administration in the care of the acute types of tuberculosis.

Throughout this work in France, as was

explained by Dr. Farrand during his fur-
lough in Colorado, the aim both of the
American Red Cross organization and of the
commission appointed by the Rockefeller
Foundation has been not so much to assume
a fatherly responsibility for the care of the
French tuberculous, but to inspire and di-
rect the expenditure of energy and money
by the French people themselves for the or-
ganization of an anti-tuberculosis campaign
along the lines best adapted on the one hand
to the French political and social organism
and mental outlook, and on the other hand
to the practical solution of the problem as
it presents itself on French soil and to the
French people. "Personalities have been
suppressed and only an ultimate of what is
best for France and her condition con-
sidered."

Original Articles

THE WORK OF THE DRAFT BOARDS.*

COLONEL JOHN R. BARBER, U. S. ARMY.

Mr. President and Members of the Colo-
rado State Medical Society: One way in
which we are helping our country to fight
the enemy is selecting men to do the fight-
ing, and that is what I wish to talk about
tonight; but before going into any detailed
discussion, I wish to lay down certain prin-
ciples and certain differences in principles
which govern our actions now as compared
with those which governed them formerly.
We used to consider that the men who were
unfit, or who were only partially fit, were
not to be accepted; that the recruiting offi-
cers should reject everybody except men
who were entirely and perfectly fit for
duty, but we know now that we have to
look at them from a different standpoint.
We have to consider everybody from eight-
een to forty-five years of age and determine
whether or not he can render full service
or limited service. On the other hand, we
have to consider the disposition of the man,
and one great object of the profession for-

merly was to get rid of the unfit. One of
the most important things was to get rid
of the disabled who might possibly need a
long course of corrective treatment, even
though they were able to perform at least
some duty, but who were unfit for full serv-
ice. In other words, we did not care what
became of them; we did not care what they
had been doing before they came to us for
examination. Once we got hold of them we
tried to find out their physical and mental
fitness for making good soldiers. But this
is all well known to most of you, and what
I wish to speak about tonight particularly
is to put before you in a specific way the
work of the draft boards.

I have come in contact with a number
of boards through my activity as senior
recruiting officer at Fort Logan. I will
speak briefly of some of the causes for re-
jection of men that have come in the draft
and that have come to Fort Logan, and it
is manifest that Fort Logan is a small re-
cruiting and draft station and has not re-
ceived as many men as the larger canton-
ments; but nevertheless the percentage will
probably be very nearly the same.

We saw during the last year thirty-eight
thousand from the first of July, 1917, to the
first of July, 1918. The number of rejec-
tions I am going to give you does not cover
the whole year, but covers the period from
May 2, 1918, to August 20, 1918. It covers
a large number of the draft of the latter
part of May, another one early in July, and
another one early in August. During that
time we took many thousands of men; we
had as many as twelve hundred in one day.
There were four hundred rejections. Of
these rejections, I will read some of the
principal causes: Of otitis media chronica,
there were fifty-seven cases; mental defi-
ciency, forty-nine cases; pulmonary tubercu-
losis, twenty-seven cases; mitral regurgita-
tion, fourteen cases, and hyperthyroidism,
twenty-six cases. In connection with hyper-
thyroidism, I must make this statement, that
a good many of the cases of hyperthyroid-
ism were not Graves' disease. They were
not severe. Of the psychoneuroses, there
were thirty-four cases; epilepsy, nineteen;
complete loss of vision in one eye, eight;

*Address delivered at the annual meeting of
the Colorado State Medical Society, September
9, 10 and 11, 1918.

trachoma, five; dementia precox, four; manic-depressive insanity, three; morons, four; enlarged cervical glands, two; stammerers, two.

During that time we rejected very few hernia cases. Now it would seem as if it would be almost impossible for a case of chronic otitis media to get by a draft board, and that was my feeling when I saw this list of fifty-one cases of chronic otitis media. The acute case would never get by, but in thinking it over and taking it up in greater detail with our ear men I will say a few words in reference to detecting otitis media. I find it difficult at times to see the drum with the ordinary head mirror, and I constantly use an electric otoscope with a lens, one I bought some years ago, and I find it almost indispensable. It might be well if members of draft boards had such an instrument as that at their command because it makes a great deal of difference. There are cases in which we cannot see the drum; the meatus is so small that it would be difficult to see the drum. Then there are other cases where there is a small perforation with a slight discharge which is difficult to detect. Such cases are difficult, yet there are men on draft boards who find these cases who are not doctors. They are discovered in almost every instance by the enlisted men who have been taught to do that by Major Bennett, and who seldom miss anything. Let me urge upon draft boards to be more particular in this respect because this was a most important cause in the rejections of the four hundred cases.

Next comes mental deficiency, and I wish to make more extensive remarks on this subject. Our neuropsychiatrist gave me a paper on that subject describing the methods used at Fort Logan and other places to detect mental deficiency cases, and these methods will enable one to detect dementia precox cases, cases of psychoneurosis, and cases of manic-depressive insanity.

Dr. Wetherill spoke of the probability of our having a conference with members of draft boards, and I will say this for the benefit of that conference, merely that the examiners in neuropsychiatry depend upon inspection. They are able to pick out these

men at a glance. Of course, it takes considerable experience to do it. I cannot do it. It takes me quite a long time to detect border-line cases of psychoneuroses, and in order to make a diagnosis it may take me several hours in some cases, but these neuropsychiatrists can do it quickly. For instance, when Lieutenant Neall came to Fort Logan and examined our boys, we joked about his examinations. We had twelve hundred men, and he would go through a troop of one hundred to one hundred and six men in two or three hours, and when he first came there I was skeptical as to the value of his examinations, as were the troop commanders. They did not exactly like the idea of having a neuropsychiatrist go through their commands, but before he had gone through more than two or three troops they were converted and so was I. He picked out men with unerring judgment who were causing trouble to the troops, men who were difficult to handle, hard to discipline, who could not learn, who were constantly going off and getting drunk, and absenting themselves without leave. Others would learn the work fairly well and reach a certain degree of proficiency in it, and then on account of some hardship to which they were subjected, become discouraged and quit. He picked out those men without the slightest difficulty and did it quickly. Any neuropsychiatrist could doubtless do the same; could pick these men out from civil life and reject them if he were on a board.

Boards should follow the suggestions given in the circulars from the Surgeon-General's office, using the tests laid down, such as the ones I have had described for me, and may discuss with the members of the draft boards, the Yerkes-Bridges test, and the Binet-Simon test. By going through the different sets of questions and physical tests members can throw out a great many of these mentally defective cases. They can find most, if not all, precox cases and manic-depressive cases, while the epileptics may cause some difficulties. Dr. Wetherill and I have discussed diagnostic points once or twice. It is possible that boards have been too strict. We have had a number of sup-

posed epileptics which may not have been epileptics. I, however, must give these officers full swing. I do not interfere with them at all, and it is probably better they should be somewhat strict because there are no more dangerous men in military service than the epileptic. It is well to get the assistance of neuropsychiatrists in handling such cases. If any of you should wish to come out to Fort Logan and see how the work is done, I am sure you would profit considerably by doing so. The examiners walk down a line of men and ask certain questions. The first question asked of the men is as to the grade which they attained before they left school, and if it is found they did not get as far as the fourth or fifth grade, they are taken out of the line and questioned. Sometimes we find that has nothing whatever to do with their mental condition, but more often it is due to feeble-mindedness. Then these questions are commonly asked: Why didn't you go to school longer? What kind of work did you do? How many jobs have you held? The question of how many jobs they have held, and how long they have worked for each employer is important. The precox cases, the manic-depressive cases, and psychoneurosis cases will quit and not work long for any one, and will go a good while without working. The question of whether a man has been a tramp or hobo, you can find out by asking questions as to whether or not he has been in any other cities or states. There are other questions which will lead you in this same direction. There is the physical examination, and it is surprising how many of these feeble-minded persons and morons will have various physical stigmata—the high arch—and these can easily be found by referring to the pamphlets and works on the subject which are available. Only the really suspected cases are put through the Yerkes-Bridges test. There are quite a good many questions and problems to solve, and the points which are to be given for the correct answering of these questions are laid down here and added up.

Passing on down the list we come to cases which are less important in a way because there are less of them in proportion, namely,

those with complete loss of vision in one eye, of which there were eight cases. Of trachoma there were five cases which scarcely need mentioning. Of manic-depressive insanity cases and morons, of which there are three or four, each will come very well under the head of the neuropsychiatric examination. Then there are the cases of enlarged cervical glands and stammering, of which there were two each, and manifestly of much importance. I am purposely leaving out tuberculosis because I believe that the members of the boards are amply well qualified to diagnose tuberculosis, and those cases that went through, twenty-seven in number, were borderline cases which the boards undoubtedly detected or studied at least and considered in their best judgment they were suitable cases for service. It is hard to believe otherwise. At all events, there were twenty-seven of them, and they were picked out, and not all by any means were picked out by the tuberculosis boards. Most of them were picked out by ordinary examiners.

Now we come to the subject of cardiac disabilities, and most of these were grouped in this report under the head of hyperthyroidism. Captain Stockton uses the term hyperthyroidism to express a clinical symptom-complex, which is more properly called neurocirculatory asthenia. A paper on that subject was published not very long ago in the Journal of the American Medical Association, and there are other papers that have been published on the same subject. The difficulty in considering these communications from the standpoint of the local boards is that they are almost all written from the standpoint of the military surgeons in active military medical practice, who got these cases after they had gone into the service, after they had broken down under the stress of hard work, and treated them and brought them back to the condition of fitness for duty. The duty of the local boards is the opposite. There is a condition known as a constitutional potential neurocirculatory asthenia which we must be on the lookout for. In other words, a man may seem perfectly able to do duty and as a civilian under the easy comfortable circumstances

of life he may show little, but I do not believe he would go through a careful examination without showing something. He might show very little on examination beyond giving the history which to the ordinary man would be free from significance, and yet on going into the military service, even with the careful and gradual training these men get, he might break down, and in order to help us to find these cases of constitutional potential N. C. A., as it is called, we must read everything we can get hold of, because it is only within the last two years it has been recognized, and only in the last few months described and worked up. In that way we shall be able to detect these cases before they get into the service.

There are certain maxims which were given me by members of the cardiovascular board as useful ones to remember in connection with the weeding out of these cases, and this is one of them: A soldier doing full duty has not heart disease, no matter what the physical findings are. In other words, if he had a disease of the heart he would not be doing full duty. If he is out in the field and getting away with it, he has no disease of the heart, no matter what murmur he may have had, or what the cardiac dullness might be. We might be apprehensive lest this man with a defective heart or murmurs should break down; but he does not. This is an aphorism of Dr. Lewis, who is one of the associates of Dr. Mackenzie, who is too well known as an authority to dispute, and I believe Lewis is considered a good authority himself. His works are frequently quoted.

How are we going to recognize those cases that may not show very much change in the way of physical signs and are perfectly competent to perform the ordinary duties of civil life, but will break down under the stress of military service? We should, in the first place, go into the history very fully and thoroughly, and in almost all these cases, according to the authorities and instructions I have, which the cardio-vascular boards have received from the Surgeon-General's office, there is almost always a history of infectious disease, either repeated attacks of acute inflammatory rheumatism or repeated attacks of tonsillitis, or else

probably pneumonia in the past, with a prolonged convalescence, and that point is emphasized by all officers with whom I have talked on the subject. If you can get a history of acute infections, followed by a prolonged period of convalescence, you have got something to go on. That would make you suspicious. Measles, whooping cough, scarlet fever, typhoid, diphtheria, all of them are toxic diseases and affect the heart muscle. Having obtained the present history, you may go back and ask about the previous history of the men, beginning with childhood, how active they have been, how much of a part they had taken in this or that, how hard they could work, and whether they had ever had shortness of breath. All these things are perfectly well known to you. Among the tests made at Fort Logan, a man is required to take one hundred hops on one foot. A large number of men can do this, and those who cannot hop one hundred times on one foot ought not to be soldiers. They may even break down and have to stop and lie down on the floor. Let a man take one hundred hops on one foot and it will be found that his pulse goes up to one hundred and forty or one hundred and forty-six. In taking less than one hundred hops his pulse may go up to one hundred and forty-six. What then? Count his pulse and give him a chance to recuperate, maybe two minutes, and see how far it goes down. He does not necessarily have to lie down, but may sit up; and count the pulse at the end of three minutes, and at the end of five minutes, and so on. When a man with constitutional potential neuro-circulatory asthenia hops one hundred times on one foot and has a pulse that goes up to one hundred and thirty-five or one hundred and forty, it will be found it will not go down to eighty or ninety in five minutes or to what the normal was previously. Then there is the important matter of taking blood pressure. The blood pressure in these neurocirculatory asthenic cases on exertion shows a divergence, a rise in systolic pressure and a fall in diastolic pressure, and in these cases we get findings similar to aortic insufficiency.

In regard to the classification of these

neurocirculatory asthenic cases, are they to be thrown out? Not at all. There are three categories of neurocirculatory asthenic cases. The first group can take violent exercises for half an hour and get over it. There is a second group who can take fifteen minutes of exercises, more or less violent, and I presume recover in a week. Then there is a third class who cannot stand any exercise and do not recover. I am suggesting this as a valuable means of differentiating between men who can do full service, those who can do limited service, and those who cannot do anything. These matters are of such great importance that they ought to be discussed more fully and much more frequently, with questions and answers, and at this conference Dr. Wetherill spoke of I will endeavor to answer any questions that come up. I am not actually making any examinations except in referred cases. The actual examination is done by the assistants.

If I have been able to say anything that is helpful to members of boards I am very much gratified. If there is any one branch of the service which I feel very strongly about, it is the work of the members of boards.

So far as I am personally concerned, my participation in the medical activities of the service is purely that of one in the army as a lifework. I make my living that way, and I should receive absolutely no special consideration. This we of the regular service do not feel we have coming to us. Those who have left their practices, gone into the service and joined the Reserve Corps, as it was then, and given up all their time, deserve a great deal more than we can give them credit for.

To those of you who could not even get the reputation of doing anything except in your own little communities, who did not get rank or recognition in that respect that is granted to those of the medical department who are in the service, I want to say that we appreciate your work, and we appreciate it very highly. You are doing work that is absolutely essential. We cannot possi-

bly get along without it, and what we want to say to you is purely in the way of encouragement and assistance. If anything I have said might be interpreted as criticism, I beg of you to forget it. It is said solely by way of encouragement and with a desire to be helpful. I thank you all.

THE NATION'S NEED OF DOCTORS AND NURSES FOR THE ARMY.*

H. G. WETHERILL, M.D., DENVER.

A recent letter from the office of General Gorgas says: "The Surgeon General directs me to state that the army expects to need in the neighborhood of thirty-two thousand medical officers within the next twelve months. A constant flow of from two thousand to three thousand medical men will also be necessary merely to provide for replacements. There are now in the service about twenty-four thousand medical officers. From this one may form an idea of the quota that will be required from each state."

More than one million five hundred thousand United States troops are now overseas, and it is probable that five million will be sent over during the next year; and ten million will ultimately be sent over if they should be necessary to win the war.

We are in this world war to win. We went into it calmly, deliberately and with a full appreciation of what it means to us, and of the sacrifices and privations it is now making necessary and will entail for the future.

It is no surprise to us that the organized medical profession was one of the first of the non-military bodies to be ready for service or to offer its services to our government. Nor are we astonished that already twenty-four thousand physicians have left their homes, their patients and their profitable pathways of peace to engage in a struggle for the freedom, the happiness and the welfare of the world. By habit, intuition, training and daily practice the physi-

*Address delivered at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

cian is always prepared to forego his own personal comfort and well-being in his ministrations to suffering mankind, and an appeal like that of outraged Belgium and France and Serbia, of Armenia and Roumania, would be as irresistible to him as is the dawn of day in dispelling darkness.

His unselfishness and idealism, his trained humanitarianism and altruism, respond at once and almost automatically to the call of suffering. He abandons his comforts and all he holds dear to minister to the miseries of mankind. He does it from habit, for as a result of his heritage he feels the obligation of the Hippocratic oath and gives himself and such skill as he may possess as freely and unselfishly as the ideals of his professional ancestors could demand.

Applied to the physicians of Colorado, what does this mean to us, and what does it mean to the civil population of our State?

Already Colorado has sent into the service about two hundred and sixty physicians. This, on an estimate of there being about fifteen hundred physicians in active practice in the state, many of whom came here for health reasons and are physically incapacitated for the service, is not a bad showing for our state, regardless of the figures emanating from Washington that place us forty-fifth in the list of states in order of representation. We are proud of those who have made this great personal sacrifice, and we are proud of those cities in Colorado where the civil population has so bravely and unselfishly determined to get along somehow more faithfully than they have ever done before. Indeed, one cannot be sure that those who are left at home may not have to work much harder than those who go, for the work of six men may have to be done by one or two.

This readjustment of civil practice and the care of the sick at home has been one of the most serious problems in England and how without those they have been accustomed to depend upon in time of trouble.

The end of such sacrifices has not yet been reached, however, for more must go and a still greater readjustment of professional relations must take place; fewer physicians will be left to do all the civil work

and they must work harder and longer and France. It has in some places been necessary to district the territory to be covered and to assign to such districts one or more physicians and surgeons to do all the work in that district.

The nursing situation over there is even worse than the medical, and in our own land today we have already come to realize that there are not half enough nurses to supply the demands of the army and that the luxury of special nurses for private patients, and other demands for nurses for individual patients, are soon to be classified as non-essentials, and that every trained nurse who can be taken from a hospital or a nurses' training school without actually crippling such institutions will be demanded for service with the soldiers somewhere.

The sooner we wake up to this impending situation as to doctors and nurses, and the sooner we prepare to meet it, the better it will be for us all. Adapt ourselves to it we must, for it is inevitable. The classification of physicians will before long be complete. Those who are both physically and professionally fit for the service will be given commissions in the Medical Corps, many with minor physical disabilities will be assigned to special service of some sort, and others will be enrolled in the Volunteer Medical Service Corps for such civil duty as may be found for them. The time is not far off when all of us must be in the service of the government in some capacity, and we cannot begin the process of readjustment too soon if we would not have the new state of things come to us as a shock and a surprise when it does come. Nurses above all must get ready. Every last nurse who is able to engage in her professional work should offer her services to the government. She is needed, and she is needed now. She should not wait for compulsion but should offer her services voluntarily. Her training, her ideals, her humanity and her patriotism should tell her that this is the thing to do, and that it should be done without delay.

Then last, but not least, the people must find ways and means to meet the new order of things. More pupil nurses must be found for the training schools, new schools must

be established, nurses' aides must be trained and employed, practical nurses must be used, and above all a spirit of self-sacrifice and a determined will to do for others and for yourself many of those things you have heretofore had done for you, must actuate everyone everywhere.

The one great business of this year and next year, indeed the only business of any real importance in the world today, is to win the war. Every man, woman and child who can be made effective to this end must do his best to bring it about as speedily as possible and all else must give way before such necessity.

The physician, more than most men, is possessed of valuable knowledge and has technical skill that is indispensable in this crisis and he who withholds it when it could be employed in such a cause at such a time, or he who is actuated by selfish or mercenary motives and he who would profit by the absence of others in the service, has a reckoning to render which will cause him many days of discontent and nights of remorse. His place in his community will not be an enviable one, and as the years pass he will find himself engaged in the unpleasant and unsatisfactory effort of trying to explain to his neighbors and to himself why he did not do his duty. Remorse will be his reward.

Doctors may not be drafted as such, but the effect of extending the draft age to from 18 to 45 will make it necessary for those who have no physical disability and no other good and sufficient reason for being exempted to go into the medical service of the government or to go into the ranks. This may not be altogether a pleasant alternative to contemplate and it would not place a physician in his best and largest field of usefulness. Certainly few physicians would from choice select such service in preference to service in the medical corps with an officer's commission.

The appropriate, the proper, and the patriotic thing to do, is quite obvious, and it is reasonable to assume that there will be many who will prefer to apply for commissions in the Medical Corps.

Colorado physicians, Colorado nurses,

and Colorado people everywhere and in every walk of life must accept these conditions as they present themselves with the best grace possible. The more adaptable we are under the privations and inconveniences incident to this war, the more comfortable we shall be under them. The more energy and enthusiasm we put into our efforts to bring it to an end, the sooner will it be over and the more quickly shall we be restored to that freedom of thought and action we have always cherished in this "land of the free and home of the brave", and the sooner shall we enjoy the prosperity and plenty that must come to us again with worldwide peace.

INSANITY: ITS PREVENTION AND TREATMENT AS A STATE PROBLEM.*

GEORGE A. MOLEEN, M. D.

It is not so very long ago that even physicians looked upon insanity as the result of vague, unknown or unmanageable causes which in some unexpected or mysterious manner attacked this or that person. In a general way this view is not far from that held today by the public. Modern psychiatry, however, has developed in keeping with other branches of medicine. The knowledge of the nature, cause, prognosis and successful treatment of conditions of the mind has removed the mysticism and indicated methods of care for them as illnesses instead of restraint and cruelty growing out of the belief that the victims were malefactors.

The gradual process of evolution in the methods of caring for insane, says Peterson (Twentieth Century Methods of Provision for the Insane—State Conference of Charities, New York, 1901), may be roughly divided into four periods, viz.:

- I. Era of demoniacal exorcism.
- II. The chain and dungeon era
- III. The era of asylums for the insane
- IV. The era just begun, of psychopathic hospitals for the acutely insane in cities,

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and colonies for the chronic and mixed classes of insane in the country.

The transition has been slow, and yet, when we realize that in the fifteenth and sixteenth centuries the casting out of demons was the limit of treatment, and that with the seventeenth and eighteenth centuries we can associate the chaining in dungeons of these mentally diseased cases, we may also feel that progress has been somewhat rapid, even though not so much so in some localities as might be desired.

It was only in 1792 that Pinel struck off the chains of the lunatics in Salpêtrière and at Bicêtre; and this had so little general effect that twenty-five years later (1817) Esquirol wrote that not only in France, but in all Europe, the insane were worse treated than criminals. These facts are true of all Europe and of the United States as well, while all parts of the world share more or less in the shame of this story.

I am not so sure that the felon has not somewhat the advantage in many states today, and I regret to confess, after many years of association with insane work in our own state, that the provision made for the care of the criminal would be considerably more inviting than that made for the insane.

The lack of attention which this subject has received is partly due to the indifference or want of interest or concern on the part of the medical profession, and more especially to the ignorance of the public as to what is, or rather what is not, being done to attempt to reclaim the mentally afflicted or ameliorate their condition.

Only a few years ago, after considerable effort, the elimination of the jury trial system was accomplished, it being replaced by the Lunacy Commission. This same statute, however, defines an insane person as "any person so insane or distracted in mind as to endanger his own person or property, or the person and property of any other, or others, if allowed to go at large", and further, "it shall be the duty of the court or judge to enter an order committing the said person to the state insane asylum".

It becomes evident that in our own state

we have not evolved beyond the third era, or that of asylums for the insane.

Under the present conditions, an insane person, under the provisions of the law, as soon as the report of the commission is accepted, is remanded to the house of detention with the approbation of the lawyer, the doctor and the public. He is as much dismissed from the mind as the convict and, aside from the hygienic existence provided, receives less attention than the felon, who clamors for pardon with much more likelihood of success than the insane unfortunate whose condition should **not** appeal in vain for treatment that might eventuate in his more deserved emancipation.

It is time that the feeling of awe and repulsion be dissociated from the word "insanity" in professional as well as lay minds. It is time that the profession be brought to the actual realization and the public made to know that insanity is an illness—a preventable and curable one; and when this is realized, the acute insane will never be taken to jails and station houses, characterized as "nuts" and sent to "bug-houses" as they are at the present time all over this and other states, pending commitment.

As far back as 1838, Horace Mann, the eminent authority on education, while chairman of the Board of Trustees of the Worcester State Hospital, said: "The great object at the hospital is the cure of insanity or the mitigation of its sufferings. **The great object of the state and of individuals should be its prevention.** The hospital is succeeding preeminently well in accomplishing the former; what can be done by the state and by individuals to effect the latter purpose?" Even though eighty years have elapsed since these lines of wisdom were penned, yet, with few exceptions, every state in the Union continues the fatuous policy of ignoring the obvious need of preventive measures and laboratory facilities for diagnostic and research work, as well as adequate provision for treatment which might, in a considerable percentage of cases, offer a prospect of remission or recovery.

The term "prevention" as applied to mental diseases, it must be conceded, is two-

fold in meaning: First, the prevention of an original breakdown through instruction in hygiene, including eugenics; the protection against the vitiating influence of tuberculosis, syphilis and other infectious diseases, and against the pernicious effect of occupational and social intoxications; the inculcating of proper methods of thinking, feeling and conduct. Second, the prevention of relapses after the patient has returned from the hospital to the community. It is on this point that the State of Massachusetts was a pioneer, if it did not stand alone in its endeavor at the time. However, Illinois in Sec. 27 of its Charities Law provides a plan of after care, reading as follows: "To secure for patients in state hospitals for the insane the earliest possible discharge from such hospitals and the continuance of expert medical advice after discharge free of cost, each such hospital shall institute a plan for the after care of parole patients and of discharged convalescent patients as follows: A staff physician or some other suitable person shall, when the superintendent deems necessary, visit the home of any paroled patient or any convalescent patient before discharge and advise with the family as to the care and occupation most favorable for the patient's continued improvement and return to health; and such visits shall be made from time to time to the patient after parole or discharge as are considered advisable by the superintendent."

It can be said without reservation that few states have met in any adequate way the appeal of economists and charitable experts for a proper development of the work of prevention and after care.

Next to the direct measures of prevention, the most effective method of proceeding against a disease is to direct efforts against its early manifestations. Thus, often the progress of the disease may be arrested, or the more serious consequences mitigated or prevented.

Direct preventive measures concern only those forms of mental disorders which are the result of acute and chronic infections and intoxications as referred to above. The available knowledge concerning other forms

should be more widely disseminated and should be applied to the good purpose of reducing their prevalence and in removing the mystery and hopelessness attached to the words "insanity" and "insane". This knowledge relates to conditions which, sometimes rather arbitrarily, are designated insanity, to less incapacitating conditions, and to the conditions known as nervousness, nervous prostration, neurasthenia, hysteria, hypochondria and other forms of ill health which are the result or sequel of the mental state. Conditions which were formerly grouped under functional nervous diseases or neuroses are now—to indicate the mental factor—called psychoneuroses.

A great advance will have been made when, instead of disregarding these persistent signs of mental and nervous disorder, it becomes the custom of the individual to seek especially experienced advisers, and the function of the state to provide institutional care for these predisposed mental cases. However, I may say, at present these hopes and ideals are for us too far in advance of more urgent needs.

A great movement came into existence with the founding of the National Committee for Mental Hygiene in 1909, the work of whose members had brought them into close contact with the problem of mental diseases, demonstrating that there was an urgent need for a national agency to help raise standards in the care and treatment of the insane and to work for the prevention of nervous and mental disorders. The work of this organization was summarized under three heads: (a) Original Inquiry; (b) Popular Education; (c) Organization of Agencies. The first was felt in Colorado about a year ago when our deficiencies were brought to light.

The next problem in the state supervision of the insane should be the provision for laboratory study for diagnostic, research and therapeutic purposes; and this is so intimately associated with the demands of the acute and remediable types of mental disorder as to indicate another need in the form of a suitable detention hospital wherein observation, laboratory diagnosis and treatment might be applied without the re-

tarding influence of an over-crowded state asylum and of its detrimental environment.

I may be pardoned if I quote from White and Jelliffe (*Modern Treatment of Nervous and Mental Diseases*, 1913, Vol. I, p. 842) to indicate how far from applicable these words are to our own state: "We have discarded the Utica crib, the straight jacket and the hypodermic, and have adopted hydrotherapy and many other more modern methods of treatment. Even the construction of our institutions is radically different." It is with a feeling of depression and reluctance, inconsistent with the pride I hold in Colorado's many virtues, that I say to those uninformed that this enviable condition of affairs does not apply in this state.

"One may well ask, what is being accomplished by these changes?", continues the same work. "Are we curing the patients? How many of them recover? These are pertinent and practical inquiries and deserve answers. Of three thousand four hundred and eighty-eight patients discharged from the New York state hospitals for the insane during the year ending September 30, 1910, one thousand five hundred and eighty-eight or forty-five and six-tenths percent were discharged as recovered and one thousand two hundred and fifty or thirty-five and eight-tenths percent as improved. In the two years, 1909 and 1910, there were, excluding transfers, thirteen thousand six hundred and ninety-one admissions and during this time there were three thousand one hundred and ten recoveries. It is interesting to note that of these only seven hundred and sixteen were alcoholic psychoses and one thousand three hundred and seven manic-depressive insanities or allied conditions.

"It should also be remembered that many cases are discharged every year as improved, though not recovered. On the other hand, it should also, on economic grounds, be recalled that the relief of the state of the care of several hundred individuals, even for several months to several years, would at the present per capita rate of expense furnish means for more efficient treatment aside from its humanitarian aspect."

In 1906, the legislature of the State of

Michigan provided for the erection of a state psychopathic hospital in connection with the University of Michigan. Without entering into details, its value may be estimated when it is able to report that in four years five hundred and sixty-eight patients were admitted, of which ninety-one were voluntary, including the usual proportion of disease entities. During this time, seventy-nine cases were discharged recovered and one hundred and twenty-six discharged improved. Less than one-half of those discharged remained in the hospital more than three months; thirty-seven and seven-tenths percent were sent to the State Institution for the Insane. Incidentally, this hospital has an added advantage through its connection with the state university of affording medical students an opportunity of becoming familiar with a subject in which the practitioner is lamentably ignorant as a rule.

"The importance of the psychopathic hospital is evident not only in the success of such as that of Boston, that of Phipp's in connection with Johns Hopkins Hospital, but latterly by the report of the Hospital Development Commission created by the New York legislature in 1917, in which the commission emphasizes 'the need in general of the extension of the facilities for the treatment of incipient mental disorders while many are still in the distinctly curable stage'. With this in view, the commission urges the establishment of a psychopathic hospital in New York City."

A psychopathic hospital is one which is devoted to the care and treatment of incipient, or acute, or recent mental disorders, and exists for the principal purpose of giving to these patients the best possible treatment with a view to returning as many as possible of them to their families or friends without the otherwise unavoidable stigma of enforced residence in a state hospital for the insane. It should have as an essential feature an out-patient department where the milder cases of mental trouble can be treated and which can serve as a center from which paroled or discharged cases from the associated state hospital can be followed and so the number of paroles be in-

creased and the number of relapses diminished; in all of these ways lending valuable aid to the community and providing a source of economy to the state.

Peterson (Twentieth Century Method of Provision for the Insane; *American Journal of Insanity*, 1902, Vol. LVIII, No. 3, p. 408) says the "ideal standard for provision for the insane is small hospitals for the acutely insane in cities, and colonies for the chronic and mixed classes of insane in the adjacent country".

In order that some idea might be gained as to the number of possible candidates for such a psychopathic hospital in this state, the cases of insanity examined and committed since the first of the present year in which the writer was concerned were reviewed. Out of seventy-nine cases, thirty-eight to forty (including cerebral syphilis three, incipient paresis six, thyroid intoxication two, manic depressive three, traumatic insanity one, dementia precox twenty-four, and possibly two climacteric cases) seemed to present prospects warranting special care such as a psychopathic hospital might afford.

It is not to be inferred that the superior equipment and facilities afforded by such an institution is an intimation of the recovery of cases of paresis, precocious dementia, nor even manic-depressive insanity. The achievement, however, in paresis at the Boston institution (Southard; Neurosyphilis) renders the possibilities of reclamation brighter than ever before under such careful and adequate treatment as is there made practicable. If this more efficient and complete treatment will do no more than to bring about a remission of from six months to a year or two, its merit as a humane undertaking will have been proved and its economic value established.

In reply to a personal communication, Dr. H. A. La Moure supplied the following information regarding the conditions obtaining at the Colorado State Hospital at the present time:

Patients on record August 17, 1918, one thousand seven hundred and fifty-two, of which eighty-four are out on parole. During the year, thirteen and two-tenths per-

cent were discharged as improved and eight and three-tenths percent as recovered. This low percentage is well explained through the necessity of receiving a large number of senile infirm cases which should have been provided for in county poor farms or homes for the aged. The laboratory facilities are stated to be "somewhat limited", but improvement is expected. Wassermann and spinal fluid examinations are now being made through the state board of health. The hope is expressed that this will be adjusted in a short time in order that this work may be done at the hospital. There is no equipment at present for the intraspinal treatment of syphilis; this is expected by the first of the year. The per capita expense has been fifty-five cents per day, with an anticipated increase during the coming year.

It seems apparent that the conditions are commendable in view of the obstacles with which the superintendent is confronted, and while, as expressed by Dr. La Moure, the institution is as well equipped as the average to treat all types of acute insanities, it must be admitted that the average is quite low.

The communication concludes with the significant statement, which clearly reflects the appreciation of the restrictions of one sincere in the purpose of elevating the standard of conditions, that, "in the state of Colorado, the question of dollars and cents has been considered first rather than the humane side of the care of the insane. There are many things which I could recommend that I feel we should have, but lack of funds has prevented us from acquiring."

That the epileptic should be provided for in a colony under state supervision and not in the state hospital is a fact so well established, through the experiences of the other states in which this plan has been adopted, that it requires no further comment.

The provision made for the training of the mental defective in Colorado is a step in the right direction, but is so far inadequate to meet the demands that a waiting list of almost three hundred names is kept at the institution. Of these a considerable number will be imposed upon the state hospital, thus

adding a further impediment to its development as a place for treatment.

It would seem to be apparent, from the brief and incomplete outline possible to present in the limited time, that before our state can claim to have advanced to the fourth era in the prevention and care of insanity, many changes will have to be made, the existing facilities enlarged upon and new provisions established. Among the most desirable, if not urgently needed, conditions to be considered, the following may be mentioned:

A psychopathic hospital for the care of the acutely insane, preferably located at Denver and in connection with the hospital of the state university for economic and educational reasons; this to be in the nature of a clearing house for cases of acute mental disorders from all parts of the state which offer a possibility of recovery or decided improvement. The laboratory for research and the provision for treatment should be maintained at the highest standard to attain a maximum of results;

An epileptic colony in the nature of a self-supporting farm might, at very moderate expense, afford not only the possibility of segregation of these unfortunate victims, but also a prospect of recovery or improvement as the experience of such establishments as were modeled after the Craig colony at Sonyea, N. Y., indicates. It has been demonstrated that not only is the physical condition improved but the frequency of attacks diminished as a direct result of the out-of-door life and associated agricultural occupation. Epileptic subjects are for the most part capable and may be thus taught to accomplish a great deal to contribute to the support of others as well as themselves, instead of being confined in asylums as expensive state charges, limiting the accommodations and treatment available for those less capable;

The enlargement of the existing or the establishment of new homes for the aged, whereby the necessity of placing senile cases unable to care for themselves among the insane would be obviated. A great part of the crowding of accommodations in asylums is due to the admission of old people. It is

stated that in a group of three hundred reviewed at Pueblo, one hundred and twenty-five were found to be over fifty, and a large number from seventy to over ninety years of age;

Finally, the organization of a State Society for Mental Hygiene as already established in Connecticut, Illinois, New York, Massachusetts, Maryland, Pennsylvania, North Carolina and Ohio; this body in affiliation with the National Committee for Mental Hygiene would be a most desirable aid in advancing the interests of the mentally afflicted. Preventive measures as well as after care are the function of social service branches of such organizations. This organization should include state and local officials, judges of criminal and juvenile courts as well as county courts, members of the medical and teaching profession, social workers, ministers and public spirited citizens.

A state society for mental hygiene should not want for support in Colorado where a population numbers so many eligibles whose willingness to improve the social and charitable conditions has not been found wanting when sufficient light was thrown upon the existing conditions to indicate their amenability to correction or improvement.

324 Mack Block.

DISCUSSION.

Edmund J. A. Rogers, Denver: I desire to call the attention of the Society to one thing in connection with this paper. This is a most opportune time for the Society to take unanimous action in supporting what Dr. Moleen has so graphically described, the remedying of the present inhuman treatment of the insane. The neurologists and psychiatrists are talking about it all the time, and a resolution from this Society would assist legislation very materially, and I hope the Society will take some action to endorse this movement. I do not feel competent to draw up such a resolution. I also think it would be better not to have such a resolution drawn up by psychiatrists because legislators would say they are looking for business. As we condemn the inhuman treatment of criminals, we should not be slow in condemning the inhuman treatment of the insane.

There are hundreds of unfortunates who could be cured under proper hygienic treatment, but who are now condemned to hopeless torture, to brutality, to horrible conditions, as Dr. Moleen has said. We need to take some action to support the position Dr. Moleen has taken. He has said all that is necessary about it.

The treatment of the insane in Colorado is inhuman, brutal and uncivilized, and the medical profession should take an active part in bringing about reform of the present conditions.

Henry Sewall, Denver: I would like to echo the sentiments expressed by Dr. Rogers, and to my mind the purview of his remarks extends into very much broader fields than those covered by Dr. Moleen. Our county hospitals are abominably rough for the most part; our health departments are abominably inadequate for the most part. Ours is the only profession competent to deal with these subjects, but we get no recognition. It is high time we make it plain to the citizens and legislators of this state that they have got to use our brains in expending their money and our money. We are the only ones endowed, so to speak, to give that advice. We are technicians, and we must be considered as authoritative advisers when we go into these fields. It is time for us to begin as a society. Let us unite on one subject and carry it through, and as soon as we win out on that subject the rest will be easy.

I had hoped that some one who is technically informed in this matter would take Dr. Moleen's paper and prepare a resolution to this end for the individual communities. We have got to make an impression upon the different communities. Now the war is on, the medical profession is necessary, and let us show them that we are just as necessary in peace as in war.

R. E. Holmes, Canon City: I am not qualified to talk on this subject, but while we are discussing it I would like to call attention to the care of these state criminals. It has been my fortune to be connected with the Colorado State Penitentiary in our town for some time, and we have anywhere from thirty-five to fifty criminally insane confined in the prison. These prisoners are taken care of pretty much as other prisoners, except there is absolutely nothing done towards their betterment. As the physician of the prison, I was unable to do any psychiatric work; not being a neurologist, I could do nothing. We have never had a person there who was a neurologist. These prisoners were allowed to drift along, and when such a resolution as referred to is drawn up and given over to our committee to do what they can towards the betterment of the insane by treatment, we should also give some idea of the better care of the criminal. This has impressed itself upon me particularly. Whenever I had to give any attention to a guard injured by an inmate of the prison, it was invariably from the "bug-house." A guard there was physically injured five times out of six by the insane, and while I would not say that the care there given by these guards is brutal, yet while they do the best they can to control them, frequently there are encounters.

I want to say, from what information I have of the insane asylum of the state, that the superintendent is conducting the best insane asylum we have had in years, and scientific progress is being promoted better than it ever has been; but as far as the criminal insane are concerned, we are absolutely neglectful of them, and it is a crying shame.

H. A. LaMoure, Pueblo: There are one or two matters Dr. Moleen has brought to our attention to which I wish to add emphasis, especially the question of a resolution from the Society to put before the legislature.

I do not believe that in the history of Colorado any medical society has taken any action regarding the care of the insane in this state or helped us at Pueblo to obtain the appropriations we should have. You know in the care of the insane, as in the care of anything, we must have money to do it. We have been running on a lower per capita appropriation up to within the

past two years than almost any other state institution in the Union, with the exception of one that cares mostly for negro insane. During the past year, even with the increased cost of everything on account of the war, our per capita has only gone up ten cents a day. You can realize that with a per capita of from forty to fifty-five cents per day (and that covers everything in connection with the institution, except new buildings) you cannot expect us to give the scientific treatment that the insane should have.

Right here I wish to correct one statement and to say that the treatment of the insane in this state is not inhuman and is not cruel. Dr. Moleen has spoken of padded cells and crib beds. I never saw a padded cell until a few days ago when I visited the penitentiary. I have visited institutions for the insane from New York State to the state of Washington and since I have been connected with this institution I have always come back to it better satisfied. I have worked in New York State institutions for two years and I feel that the work we are doing here is fairly good as compared with other institutions where they have a per capita of from sixty to eighty cents.

There is another matter I want to emphasize and that is the establishment of a psychopathic hospital in Denver. This has been a hobby of mine. The first psychopathic hospital in the United States was established in my home city of Albany, New York. There is no doubt that a great many cases that come to us would have been saved from the state hospital if they had received early treatment and many of them could have been cured. If any of you physicians could sit in my office and see the cases as they are brought to us, you would wonder why we ever have any cures. Many cases are detained somewhere else before they reach us and a great many are cases of old decrepit people, who, until the last two years, were kept in the county poor houses.

Two years ago this state voted a constitutional amendment which takes from the Colorado Board of Corrections the right to control the capacity of the institution and compels us to take care of all cases whether we have room or not. We have a capacity of fifteen hundred and we have one thousand seven hundred and fifty inmates. What can we do to properly classify these cases? We have no more room, consequently they are very crowded.

Another thing, the law regarding the commitment of the insane is extremely defective. Under this law if any of you physicians had a case of typhoid fever, you could send him to the state hospital. Any case of sickness can be sent to the state hospital, but fortunately this has not been carried out; still, the law is very lax. I do not believe the state hospital should take care of senile cases, especially those who really do not have psychoses; but we are taking care of more and more of these every day. Two out of every three of these cases really do not belong in the state hospital. I hope the Society will make an effort this year during the coming legislature to bring this matter before it in such a way that something will be done. I go to Denver in an attempt to have the law amended and ask for certain appropriations, but when it comes to getting the appropriations I ask for, I do not get them.

We have one hundred and twenty acres of ground at Pueblo and nineteen hundred people living on them. We should have colonies for the insane—at least one. We should have a farm near Pueblo under the present management, or

somewhere else in the state. At any rate something should be done to relieve the crowded conditions at Pueblo before we can do what we ought to do for the insane.

Two years ago Dr. Hamilton, sent here by the National Association for Mental Hygiene, made a survey of the entire situation in the state and made a report that is open to all of you. He also appeared before the Denver Medical Society and told what was needed, but at the present time we have not received anything he recommended.

Edmund J. A. Rogers, Denver: In my previous remarks I was not thinking of the Pueblo asylum. I know nothing about the practical workings of that institution. The institution I had in mind was very much nearer my home where I have unfortunately a practical acquaintance with the treatment of the insane, and it is horrible.

David A. Strickler, Denver: In order that this matter may be brought intelligently before the Society, I move that the president appoint a committee of three to draft a resolution to be submitted to the Society tomorrow at some time during the day, and that this committee also be prepared to present a suitable bill to the legislature this fall to carry out the desires of the Society.

Motion seconded and carried.

Dr. Moleen (closing): I wish to make the suggestion that the committee not include any of the nervous disease men, for obvious reasons that have been mentioned.

I appreciate very much the attention you have given the subject I have placed before you in a very brief way.

Unfortunately the omission I made in the paper, as a result of the limitation in time, concerned the conduct of institutions. I thoroughly agree with what has been said that under the circumstances and conditions Dr. LaMoure has acquitted himself very well in the handling of the insane. He deserves the praise of this Society with reference to the criminal insane. The criticism came on the question of treatment as suggested in the paper, and it was with reference to the treatment of the insane before admission to the asylum, and the fact that cases that go there are so far advanced, as a rule, that very little or nothing can be done for them. Those are the cases we want to reach.

I want to correct an impression that I suggested plans of treatment which were discarded. What I said with reference to the cribbed bed or padded cells was a quotation from Jelliffe, who said they had been discarded, and I pointed out that the general conditions were applicable to our state.

With reference to the war and its effects on the mentality of individuals, it has been the experience in every war of which we have a record that an increase in the insane was the result of war or the result of the mental strain incident to it. We are going to have a great many more insane in the future for this reason than we have now, and it is a horrible outlook for us to face if we have no better accommodations for the increasing number of insane people than we can at present afford. The criminally insane cases should be treated just the same as any other sick persons, but no special provision should be made for them other than for their sickness the same as for incompetent people who are unable to take care of themselves and who cannot control themselves. Under these circumstances it is inhuman to treat them by neglect.

A CASE OF HYSTERICAL LAMENESS WITH CONVULSIONS TREATED BY SUGGESTION.

C. S. BLUEMEL, M. D., DENVER.

Peter G——, a young Italian of twenty-six, was admitted to the Denver City and County Hospital on March 26, 1917. He had previously worked as a coal miner, but had had to stop work because of "shaking spells." In these spells he would frequently fall, and would occasionally hurt himself. He also complained of hot and cold pains in the epigastrium.

The family and personal history were negative. The physical examination was negative, except for some ataxia. He performed the finger-finger test and the finger-nose test with extreme languor, and would frequently miss his mark by a couple of inches. Upon closing his eyes for the Romberg test he would quietly fall back as though going to sleep.

The blood Wassermann and urinalysis were negative. An x-ray examination of the head, made on account of an occipital depression, was also negative.

For weeks after being admitted to the hospital the patient remained in bed, refusing to get up for fear he might fall, and refusing to sit up for fear of his "shaking spells". Once or twice a day he had "shake 'em up" spells, as he called them, in which his head would be slightly extended, and his body would rise spasmodically from the bed. These attacks would last several minutes. When induced to get out of bed, he would sink to the floor or lurch back on to the bed. When put in a chair, he had to be tied.

The patient improved considerably during his first two months in the hospital, this being largely due to the efforts of Dr. Albert Dewey, who assisted him to walk, and later induced him to walk with the aid of a cane. The patient always walked on the outer side of the right foot, though there was no contracture or other physical deformity.

When I entered the neurological service as intern on June 1, 1917, I found a patient who could with difficulty be induced to walk alone. He walked nervously, clinging

to the bed-rails for support. When walking without support he went precipitately, almost on a run, with his body tilted forward and to the side, so that his right shoulder went foremost. He reminded one of a football player bucking the line. He still walked (or ran) on the outer side of his right foot, and he usually looked at the place he was coming from and not at the place he was going to. He fell quite frequently.

But the patient rarely made an attempt to walk. He spent most of the day sitting in a chair with his body thrown across the bed and his head buried in his arms. He would not undress at night. His going to bed consisted simply of covering his head with the bed clothes. He still frequently had his "shake 'em up" spells, and he often complained of headaches in the morning.

The patient continued in this condition for several weeks without improvement. At this juncture his head was x-rayed, and as the procedure seemed to make a deep mental impression on him, I suggested to him that an operation on his head would cure him. He accepted the suggestion with eagerness, and I accordingly obtained the consent of the visiting physician, Dr. S. Goldhammer, to the performance of a pseudo-operation.

I performed the "operation" a few days later, after repeatedly assuring the patient that an operation would cure him. I first shaved his head, then anesthetized him with somnoform, and burned the scalp with an actual cautery. After bandaging his head, I put him to bed in the surgical ward—in entirely new surroundings. I kept him in bed for two days, during which time I saw him frequently and assured him that the operation had been successful. Finally I told him he could get up and walk back to his old ward. He was a little apprehensive about walking, and attempted to use the bed-rails for support. I insisted that this was not necessary, and made him walk in the middle of the ward. He walked normally, but rather slowly, and with his gaze fixed on the floor ahead.

He went back to bed in his old ward, but on the following day was allowed to get up. His gait was still a little slow and cautious,

but was otherwise normal.⁶ In a few days he regained full confidence, and walked with no further show of caution. He took much pride in his recovery, and was always pleased when asked to walk for any of the visiting physicians.

The patient was still a little hesitant about going to bed, and the first night after being up and around he wished to sit in a chair and cover his head with the bed clothes as he had done previously. But he was not allowed to do this, and after the first night he went to bed without persuasion.

The patient was discharged five days after his operation. He walked normally, he was free from his attacks of "shake 'em up," and he no longer fell. He still complained at times of some discomfort in the epigastrium.

Whether or not he remained well, I do not know. I have endeavored to trace him through the Italian Consulate in order to report his present condition, but I have not been able to locate him.

900 Metropolitan Building.

News Notes

Dr. A. J. Bender of Salida was married to Miss Catherine Eberville of Leadville in the latter part of October, just prior to his leaving for training at Fort Riley.

Soda fountain proprietors of Boulder have been ordered by the city health department to sterilize all glasses or dishes used at the fountains with hot water and to wash them with washing soda. It is said the regulation will be a permanent one.

The death list over the state since our last publication includes the following members of the Colorado State Medical Society:

Dr. W. N. DeArmond of Fort Collins.

Dr. Horace Burns of Denver.

Dr. John E. Wilson of Denver.

Death has also claimed Drs. W. J. Churchill of Longmont, C. E. Bower of Kersey, Ralph Smirl of New Raymer, John Smits of Leadville and L. H. Kemble of Aspen.

Dr. Mary R. Stratton of Denver has moved from the Majestic building to Dr. Carmody's office in the Metropolitan building, where she will be located for the period of the war.

Dr. C. S. Bluemel, formerly at Mount Airy Hospital, has opened offices in the Metropolitan building, Denver, and will devote himself to nervous and mental diseases.

Dr. J. E. Cavey of Stratton spent a short time in Denver in the early part of November.

The War.

In the September 13 edition of *The Stars and Stripes*, the official newspaper of the American expeditionary forces published in France, appears a very interesting description of the treatment of mustard gassed soldiers by means of hot shower baths furnished by quickly set up mobile apparatus, each unit of which carries a twenty-five hundred gallon tank of water with an instantaneous heater, takes care of twenty-four soldiers at a time and disposes of forty-eight in two and one-half minutes. The removed clothing is freed of gas and cooties while the bath is going on. This seems to be the prescribed first treatment of mustard gas victims and is carried on in the immediate rear of the front lines. Oil-skin overalls protect the operators.

Frederick William Hohenzollern has been deprived of his commission.

Dr. H. R. McGraw of Denver has received a captain's commission and was ordered to report on November 11 at Fort Oglethorpe, Ga.

Dr. R. L. Drinkwater of Denver has been promoted to a majority.

Dr. William G. Mudd of Denver has been commissioned a lieutenant.

Dr. H. A. Smith of Delta has been commissioned in the medical corps and ordered to make application for passports to Siberia.

Dr. James T. Elliott of Denver has been commissioned a captain. He left in the latter part of October for Camp Pike.

Dr. R. L. Downing of Bayfield has been commissioned in the medical corps.

Base hospital 29, organized in Denver, is located permanently in Finsbury Park in the north end of London. It was said in October to contain one thousand American wounded soldiers with preparations under way to extend its capacity to twenty-five hundred.

Dr. E. D. Burkhard of Delagua, having returned from service overseas, has been promoted to a captaincy and ordered to Camp Logan.

Dr. T. A. Davis of Portland has been given a lieutenant's commission and in October was ordered to Camp Cody.

Dr. W. J. White of Longmont has been promoted to a captaincy.

Dr. W. J. Churchill of Longmont has been given a commission in the medical corps.

Dr. E. L. Timmons of Colorado Springs has been commissioned a captain and was ordered to report on October 21 at general hospital twenty-one, Aurora.

Dr. R. R. Taylor of Pueblo has been given a lieutenant's commission and ordered to Camp Pike.

Dr. A. R. Williamson of Pueblo was commissioned a lieutenant in the early part of October and ordered to Fort Riley.

Drs. J. W. Ames and Gerald B. Webb, of Denver and Colorado Springs respectively, have been appointed lieutenant colonels (emergency).

Dr. F. P. Gengenbach of Denver has been made a captain in the medical corps and on October 18 left Denver for Camp Greenleaf.

Dr. L. H. Ruegnitz of Denver has been made a lieutenant. He reported at Fort Riley late in October.

Dr. M. D. Healy of Denver has been commissioned a captain in the Canadian army and was ordered to report on November 10 at Toronto.

Dr. W. A. Jayne of Denver has been promoted from a majority to a lieutenant-colonelcy.

Captain G. H. Cattermole, writing in the early part of November to *Colorado Medicine*, says, "I finally received my commission as captain in the medical corps and am on my way to U. S. General Hospital No. 19, Azalea, N. C. It is situated near Asheville and is for the same purpose as the one at Aurora. I hope later to be transferred back to Colorado if I am to stay in the service long."

Lieut. Robert M. Shea of Denver writes that he is attached to the naval unit of the University of California, where there is a student body of more than five thousand, nearly all under military or naval training.

Dr. Homer B. Catron of Englewood has been commissioned a lieutenant.

Dr. S. H. Bell of Montrose has been commissioned a captain.

Dr. Wilbur Lucas of Pueblo has been commissioned a captain.

Dr. D. G. Monaghan of Denver was given a commission as captain in the latter part of October.

Dr. M. D. Currigan of Denver has been given a commission as lieutenant.

Dr. I. C. Mierley of Denver has been commissioned a lieutenant.

Dr. P. A. Walters of Monte Vista has been commissioned a lieutenant.

An appeal is made from the Siberian commission to the mountain division of the American Red Cross for one tuberculosis specialist, one roentgenologist, and two oculists. It is desired that they be able to speak French, Russian or Slovak, but this qualification may be waived.

Dr. Frank W. Kenney has arrived in France for service with the American Red Cross.

Dr. D. O. Norton of Fort Collins has been transferred from Fort Riley to Camp Travis.

Dr. Hubert Work of Pueblo, formerly a major, is now lieutenant colonel in the medical division of the provost marshal general's office, Washington, D. C.

Captain C. D. McKenzie of Denver has been assigned to evacuation hospital No. 42 in order to entrain for a point of embarkation.

Major Crum Epler of Pueblo, in writing to *Colorado Medicine*, said he was just leaving Camp Sherman for a port of embarkation.

Dr. Alex Block of Pueblo writes to Dr. Spivak that his son, Dr. Leon Block, is with field hospital No. 160 and has been promoted to a captaincy.

Dr. J. H. Allen of Denver has been given a captaincy in the M. C. and stationed at general hospital number twenty-one, Aurora, Colorado.

Dr. W. A. E. Debeque, Jr., of Debeque, has been promoted to the rank of captain. He is in France.

Dr. Robert Lewis of Denver has been made a lieutenant in the M. C. and it is said will be located at the Aurora general hospital.

Dr. J. A. Triplett of Denver has been commissioned in the M. C. He left Denver October 18th for a training camp.

Dr. W. V. Mullin of Colorado Springs has been given a lieutenantcy in the M. C. and has reported at Azalea, N. C., where it is reported he will be connected with the ear, nose and throat section in the general hospital there.

Dr. G. F. Ewing of Julesburg was given a commission as lieutenant in the M. C. in October and ordered to Fort Riley.

Dr. Omar R. Gillett of Colorado Springs has been promoted to the rank of captain.

Dr. James H. Brown of Colorado Springs has been promoted to the rank of major.

Dr. R. L. Charles of Denver left October 19th for training at Fort Riley.

Dr. A. R. Morrish of Fort Collins has been honorably discharged from the army medical corps because of physical disability. He has resumed practice in Fort Collins.

Dr. M. D. Brown of Craig has been promoted to a captaincy in the aviation section of the army.

Dr. W. R. Tubbs of Carbondale has been commissioned a lieutenant. He reported early in October at Fort Riley.

Dr. T. A. Davis of Portland has been made a lieutenant. He reported at Camp Cody in the latter part of October.

Former Captain H. L. Fowler of Denver is now a major and is stationed at Fort Riley on special duty.

Captain J. C. Gorsuch of Denver has been transferred from Fort Logan to the general hospital at Aurora.

Dr. J. W. Thompson of Pueblo, after serving in the aviation section of the army in this country at Fort Riley, Mount Clemens, Kelly Field, Camp Travis and Fort Sam Houston, has finally landed in Siberia and is now ophthalmologist and sanitation officer in evacuation hospital unit number seventeen.

Letter From Dr. C. D. McKenzie.

The following letter has been received by Dr. Melville Black from Capt. C. D. McKenzie, Camp Greenleaf, Chickamauga Park, Georgia:

"Chattanooga, Tenn., Oct. 6, 1918.

Dear Doctor Black:

Came in town to spend the day with Mrs. McKenzie. This is some place. We have about 4,000 to 6,000 M. Ds. Have all kinds: big ones, little ones, fat ones, lean ones, but the one common feature of all, they are all "surgeons".

It is surprising to see how one can adapt himself to camp life, and live out of a grip. The less you have with you the better off you are.

Our camp is the old Chickamauga battlefield and is quite a pretty place, or rather was till the troops came here. They number somewhere about 50,000. Of course this takes in quite a large area and is scattered in three different places, all near though, and under one command.

We have fifty-six in our company at present, situated in two barracks, twenty-eight to a barrack, which is the limit. This gives each man 5 by 9 feet floor space for his cot, trunk, chair and possessions, so you can see where a man would be if he had a lot of junk. All windows and doors open all the time. Get up 6 a. m. Roll call 6.10, in which time you are supposed to be dressed, but it is allowable to attend in your p. j's.—anyway to get there. Then you have to wash, shave, make beds according to Hoyle, sweep out barracks, polish shoes and puts., and get ready to line up for breakfast at 7. (Have 20 minutes for meals.) Then walk a mile to lecture from 8-9, 9-10, 10-11.45, or else get out and drill for two hours on Kelley Field. Then come back and get two hours lectures; then dinner 12 m. 20 minutes. 12.45 quiz, 3-4, 4-5 lectures, French, or something to put in the time, 5.15 retreat, which lasts till about 6. Supper 5.45-6.30. 6.30-7.30 study outdoors (can't see after 7 to read, but orders are to study outside so study we do). 7.30-8.30 quiz etc. 8.30-9.15 generally have some kind

of a military problem to work on. 9.30 in bed and all lights out and no talking. "Nothing to do till tomorrow", then same thing over again.

Have walked more since coming here than in the past twenty years and feel fine.

Everything is done according to Hoyle and on the hour slated, which is a very good thing to get accustomed to.

The mess is very good. Have one mess house for about every one hundred men. Meals served family style and everybody grabs or is left. This is where a b. h. reach comes in handy. They can cook everything o. k. except their coffee which is n. g. Mrs. McKenzie came out to dinner Wednesday evening. Had a chicken dinner and it was very good. Costs \$1.00 per day and all the sugar you want and white bread too, which makes up for the coffee.

Have taken a lesson in blanketing a horse army style; will be riding next I presume.

I can see now why they use so many cigarettes in the army; it's because you don't have time to smoke anything else. If you light a cigar the bugle blows before you have it fairly started.

Sincerely yours,

C. D. McKENZIE."

Medical Societies

CITY AND COUNTY OF DENVER.

The Medical Society of the City and County of Denver held its regular meeting the evening of October 1, 1918. President Moleen presided.

Influenza.

The scientific program was opened by an excellent and timely paper upon "Epidemic Influenza" by Dr. C. E. Edson. He said that these epidemics occur thirty or forty years apart. The last, in 1889 and 1890, was called Russian because it began in Russia and this one, for a similar reason, is called Spanish influenza. He called attention to its extreme contagiousness, short incubation period, and sudden onset with a primary localization; also to the extreme depression, slow convalescence and frequent atypical pneumonias with slow resolution. He emphasized the necessity of keeping patients warm and in bed. Those soldiers who have mild attacks and return too soon to military life would, he thought, probably suffer from dilated hearts or general breakdowns. He suggested as a prophylactic measure the closing of all public meeting places for two weeks when the epidemic would first attack a city or town. Dr. Whitney, in the discussion, spoke of the many mild cases in the former epidemics and of the large number of cases of atypical pneumonias. The disease was accompanied by very high temperatures and was very persistent. That there had been a rise in the mortality rate from all diseases following the former epidemic was stated by Dr. Henry Sewall. Dr. Blickensderfer reported having two smallpox cases which at first he thought were influenza.

The next paper was by Dr. William H. Sharp-ley on the "Problems of the Government in Handling Venereal Diseases". He gave a resumé of the measures which were being taken by the City of Denver and also by the United States Public Health Department. The reports made

under the operation of the present law in Denver show that fifty-five per cent of these diseases were handled by the druggists.

"The Proposed Legislation Advocated by the Surgeon General Relating to Venereal Diseases" was the subject of a paper by Lieutenant W. T. Kohn. He made a statement that the venereal diseases were the most serious of the communicable diseases of the army. There is a high percentage of these diseases in the draft army and he outlined the methods in use to eradicate them. He said the army was opposed to segregation. He asked that a state law should be passed which would make it compulsory to report venereal diseases. He also advocated the establishing of a state reformatory for young women. The drugs which are used to cure venereal diseases should be as hard to obtain as narcotics, the victims thus being forced to seek proper medical aid. His paper was discussed by Dr. William Beggs, Dr. Minnie Love and Dr. J. B. Davis.

Dr. Meader announced the Southwestern Tuberculosis Conference and invited the members of the society to attend its sessions.

As there has been much misunderstanding among the profession in regard to the Volunteer Medical Service Corps, Dr. Edward Jackson came before the society in its interests. Dr. A. S. Taussig discussed the question.

The Secretary then read the report of the committee which had been appointed to consider the matter of a proper emblem for physicians' automobiles. The report was accepted and the committee continued.

MARY R. STRATTON,
Reporter.

Book Reviews

On the Fringe of the Great Fight, by Colonel George G. Nasmith, C. M. G., New York. George H. Doran Company.

To the medical reader this volume may at first prove in one sense disappointing. The publishers' descriptions rather lead one to expect that Nasmith's story will be mainly devoted to definitely medical aspects of the war. Such, however, is not the case, since there are practically only three medical chapters out of a total of fifteen. But any error of overstatement on the publishers' part is amply compensated for by the general attractiveness of Nasmith's narrative.

Colonel Nasmith was one of the first medical officers of the Canadian army, and indeed of any army, to encounter the horrors of the German gas offensive; and he played an important part in devising means of defense against this barbarous weapon. Leaving Canada with the first thirty-three thousand of Canada's young cubs, he worked on Salisbury Plain through the epidemic of cerebrospinal meningitis, reached France with ninety-seven per cent of his men inoculated against typhoid fever, and was present at the second battle of Ypres, where a large break was made in the French line by the Germans with the aid of their mixture of chlorine and bromine gas. He felt, as he stood and watched some of his own Canadians who had been gassed, "that the nation who had planned in cold blood the use of such a foul method of warfare should not be allowed to exist as a nation but should be taken and choked until it, too, cried for mercy."

Both in its medical and in its nonmedical portion Nasmith's book is one which will fascinate

either physician or layman. It is full of keen observation and racy accounts of personal experience along the firing line. From the strictly medical point of view the most important chapter is that relating to laboratory work in the field. A great variety of jobs fell to the laboratory man; from the examination of soldiers who had been in contact with a case of cerebrospinal meningitis (for the detection of carriers) to the sampling of the large water carts by which the soldiers are supplied with drinking water free from the risk of typhoid infection; and from the analysis of tea suspected of being poisoned to the investigation of a small bottle of opium which had been found on the body of a dead German who "had evidently been prepared for a painless passage across the Styx when such necessity arose."

The chapter on keeping the British soldier fit tells how epidemics were kept away from the British army during this war, so that an army of nearly 5,000,000 men has had so little typhoid that it is practically a negligible quantity. Great Britain was fortunate in that her first army was a small body of regular troops perfectly equipped from the medical standpoint as well as in every other way; and that as division after division has been sent to the army in France, these divisions also have been completely equipped on the basis of the experience acquired by those already in the field.

Nasmith's literary style is excellent, although simple and direct. In places the book is rather annoying to a critical reader by reason of minor typographical errors which should have been eliminated; such for example as the muddled use of quotations within quotations on page 61. But these are defects which cannot greatly detract from the general interest of the volume.

The Essentials of Materia Medica and Therapeutics for Nurses. By John Foote, M. D., Assistant Professor of Therapeutics and Materia Medica, Georgetown University School of Medicine; Instructor in Materia Medica and Therapeutics, Providence Hospital Training School for Nurses. Third Edition, Revised, Enlarged and Reset. J. B. Lippincott Company, Philadelphia, 1918. Price, \$1.75.

This new edition is revised to conform more closely to the practical needs of the student nurse and also to the standards of the U. S. Pharmacopeia, IX Revision.

The book is divided into three parts.

The first part contains the definitions, weights, dosage and action of drugs together with the methods of administering medicines and the preparation of solutions.

The second part deals with drugs and medicines under therapeutic groupings and also contains tables in a form for ready reference for all forms of special disinfection.

The third part contains reference tables for the use of the nurse and other information of practical value. There are lists of drugs, chemicals and proprietary medicines; tables of poisons and their antidotes; tables of doses of all drugs; information for the nurse in regard to the Harrison narcotic act; the antiseptics used in military surgery; a number of miscellaneous formulas, and emergency infant feeding.

This is an excellent reference work for the nurse besides being a book well adapted for the use of the student nurse in her study of materia medica and therapeutics.

M. R. S.

List of Members of the Colorado State Medical Society

November 1st, 1918

Name	Postoffice	County	Society	Name	Postoffice	County	Society
Abdun-Nur, A. S.	Walsenburg	Huerfano		Block, Leon	Pueblo	Pueblo	Pueblo
Aberg, A.	San Luis	San Luis Valley		Blotz, B. B.	Rocky Ford	Otero	Otero
Abrahams, H. E.	Trinidad	Las Animas		Blotz, B. F.	Rocky Ford	Otero	Otero
Adami, J. Geo.	Montreal, Quebec	Denver		Bluemel, C. S.	Denver	Denver	Denver
Adams, O. F.	Segundo	Las Animas		Bolton, L. C.	Cedar Edge	Delta	Delta
Adkinson, R. C.	Florence	Fremont		Bonesteel, A. E.	Denver	Denver	Denver
Agan, J. N.	Pierce	Weld		Bonney, S. G.	Denver	Denver	Denver
Albi, Rudolph	Denver	Denver		Booth, C. O.	Cheyenne Wells	Denver	Denver
Allen, H. J.	Denver	Denver		Bortree, L. W.	Colorado Springs	El Paso	El Paso
Allen, H. W.	Boulder	Boulder		Bouslog, J. S.	Boulder	Boulder	Boulder
Allen, J. H.	Denver	Denver		Boyd, E. T.	Denver	Denver	Denver
Allen, L. R.	Colorado Springs	El Paso		Boyd, Geo. A.	Colorado Springs	El Paso	El Paso
Allen, W. P.	Greeley	Weld		Braden, J. M.	Lafayette	Boulder	Boulder
Amesse, John W.	Denver	Denver		Brady, E. J.	Colorado Springs	El Paso	El Paso
Anderson, A.	Ault	Weld		Bramley, J. R.	Denver	Denver	Denver
Anderson, B. P.	Colorado Springs	El Paso		Brandenburg, H. P.	Denver	Denver	Denver
Anderson, Geo. M.	Casper, Wyo.	Denver		Brethouwer, C. G.	Montrose	Montrose	Montrose
Anderson, T.	Denver	Denver		Brinton, W. T.	Cripple Creek	Teller	Teller
Andrew, C. F.	Longmont	Boulder		Broman, O. F.	Greeley	Weld	Weld
Andrews, Geo. D.	Walsenburg	Huerfano		Bronson, D. A.	Telluride	Montrose	Montrose
Andrew, John	Longmont	Boulder		Bronson, W. T.	Pueblo	Pueblo	Pueblo
Apperson, Ed. L.	Denver	Denver		Brown, E.	Pueblo	Pueblo	Pueblo
Arndt, Rudolph W.	Denver	Denver		Brown, Geo. E.	Denver	Denver	Denver
Arneill, James R.	Denver	Denver		Brown, H. C.	Denver	Denver	Denver
Arnold, C. R.	Colorado Springs	El Paso		Brown, J. H.	Colorado Springs	El Paso	El Paso
Arnold, W. W.	Colorado Springs	El Paso		Brown, L. G.	Colorado Springs	El Paso	El Paso
Atkinson, Curtis	Ft. Collins	Larimer		Brown, Wm. S.	Denver	Denver	Denver
Atwood, A. D.	Denver	Denver		Brownell, W. F.	Ft. Collins	Larimer	Larimer
Aufmwasser, H. W.	Denver	Denver		Brunk, A. S.	La Junta	Otero	Otero
Arst, T. H.	Cedar Edge	Delta		Bryson, E. H.	Grand Junction	Mesa	Mesa
Averill, H. W.	Evans	Weld		Buchtel, F. C.	Denver	Denver	Denver
Bailey, M. M.	Loveland	Larimer		Buck, W. E.	Pueblo	Pueblo	Pueblo
Babcock, M. L.	Sterling	North East		Bulette, W. W.	Los Angeles, Cal.	Pueblo	Pueblo
Bagot, W. S.	Denver	Denver		Bull, H. R.	Grand Junction	Mesa	Mesa
Baird, Wm. J.	Boulder	Boulder		Bundsen, C. A.	Denver	Denver	Denver
Baker, R. C.	Denver	Denver		Burdick, W. T.	Denver	Denver	Denver
Baker, W. H.	Pueblo	Pueblo		Burgin, Chas. H.	Delta	Delta	Delta
Baker, W. T. H.	Pueblo	Pueblo		Burket, R. S.	Denver	Denver	Denver
Bancroft, G. W.	Colorado Springs	El Paso		Burkhard, Ed. D.	Delagua	Las Animas	Las Animas
Bane, Wm. C.	Denver	Denver		Burnett, A. L.	Silverton	San Juan	San Juan
Bane, W. M.	Denver	Denver		Burnett, C. T.	Boulder	Boulder	Boulder
Barbour, W. L.	Ludlow	Las Animas		Burnham, N. G.	Denver	Denver	Denver
Burnett, N. M.	Lamar	Prowers		Burns, C. P.	Denver	Denver	Denver
Barney, J. M.	Denver	Denver		Burns, H. R.	Denver	Denver	Denver
Barney, N. E.	Sterling	North East		Burns, T. M.	Denver	Denver	Denver
Barrett, G. W.	Crook	North East		Bush, J. H.	Sterling	North East	North East
Bast, Lee	Hotchkiss	Delta		Butterbaugh, Wm. S.	Westcliffe	Fremont	Fremont
Bates, Mary E.	Denver	Denver		Calkins, H. A.	Leadville	Lake	Lake
Baum, Harry L.	Denver	Denver		Campbell, A. J.	Denver	Denver	Denver
Beachly, John V.	Stratton	Denver		Campbell, J.	Boulder	Boulder	Boulder
Beaghtler, Amos L.	Denver	Denver		Campbell, W. A.	Colorado Springs	El Paso	El Paso
Beck, L. H.	Manitou	El Paso		Campbell, W. H.	Pueblo	Pueblo	Pueblo
Beck, N. C.	Denver	Denver		Canby, H. S.	Denver	Denver	Denver
Beers, Ida V.	Denver	Denver		Carey, J. D.	Timnath	Larimer	Larimer
Beggs, Wm. N.	Denver	Denver		Carmody, T. E.	Denver	Denver	Denver
Bellrose, N. W.	Eaton	Weld		Carrier, F. N.	Santa Rita, N. M.	Fremont	Fremont
Bender, A. J.	Salida	Lake		Carey, F. H.	Denver	Denver	Denver
Bennett, E. C.	Boulder	Boulder		Case, A. G.	Denver	Denver	Denver
Bergen, Frank L.	Burlington	Denver		Cattermole, Geo. H.	Denver	Denver	Denver
Berlin, Wm. C. K.	Denver	Denver		Cavey, J. E.	Stratton	Unattached	Unattached
Beshoar, Ben	Trinidad	Las Animas		Caseley, W. N.	Colorado Springs	El Paso	El Paso
Bigelow, May T.	Denver	Denver		Cecchini, A. S.	Denver	Denver	Denver
Biles, J. A.	Del Norte	San Luis Valley		Chamberlain, F. C.	Colorado Springs	El Paso	El Paso
Birkenmayer, W. C.	Denver	Denver		Chamberlain, R. S.	Denver	Denver	Denver
Bixler, C. W.	Erie	Boulder		Champlin, H. H.	Denver	Denver	Denver
Black, H. A.	Pueblo	Pueblo		Chandler, G. B.	Calhan	El Paso	El Paso
Black, J. A.	Pueblo	Pueblo		Chapman, W. S.	Walsenburg	Huerfano	Huerfano
Black, Melville	Denver	Denver		Charles, Robt. L.	Denver	Denver	Denver
Blackman, A. A.	Colorado Springs	El Paso		Chase, John	Denver	Denver	Denver
Blackwood, H. A.	Weldona	Morgan		Chase, P. M.	Denver	Denver	Denver
Blickensderfer, G. M.	Denver	Denver		Chesmore, H. P.	Colorado Springs	El Paso	El Paso

Name	Postoffice	County	Society	Name	Postoffice	County	Society
Childs, S. B.	Denver	Denver	Denver	Dorset, B. C.	Denver	Denver	Denver
Chipman, J. C.	Sterling	North East	North East	Douglas, A. L.	Denver	Denver	Denver
Chisholm, A. J.	Trinidad	Las Animas	Las Animas	Downing, E. D.	Woodman	El Paso	El Paso
Christopher, D. I.	Colorado Springs	El Paso	El Paso	Downs, J. E.	Hayden	Routt	Routt
Church, W. F.	Greeley	Weld	Weld	Drechsler, Wm.	Denver	Denver	Denver
Churchill, W. J.	Longmont	Boulder	Boulder	Drinkwater, R. L.	Denver	Denver	Denver
Clarke, Edwin A.	Akron	Unattached	Unattached	Drisdale, W. E.	Silver Plume	Las Animas	Las Animas
Clark, L. G.	Glenwood Springs	Garfield	Garfield	Drown, L. M.	Denver	Denver	Denver
Cleland, W. S.	Delta	Delta	Delta	Duncan, Oscar A.	Crawford	Delta	Delta
Clow, J. B.	Denver	Denver	Denver	Dunkel, R. C.	Cokedale	Las Animas	Las Animas
Cochems, F. N.	Salida	Lake	Lake	Dunlop, Josephine N.	Pueblo	Pueblo	Pueblo
Cochran, James D.	Haxtun	North East	North East	Durnell, A.	Strong	Huerfano	Huerfano
Coffman, F. R.	Denver	Denver	Denver	Dunwoody, J. A.	Cripple Creek	Teller	Teller
Cohen, H. M.	Denver	Denver	Denver	Dyde, C. B.	Greeley	Weld	Weld
Cole, F. E.	Denver	Denver	Denver	Dymenber, N.	Denver	Denver	Denver
Collins, E. W.	Denver	Denver	Denver	Eakins, C. F.	Brush	Morgan	Morgan
Conant, E. F.	Denver	Denver	Denver	Earle, Jas. R.	Somerset	Delta	Delta
Condon, C. E.	Breckenridge	Lake	Lake	Early, A. H.	Denver	Denver	Denver
Cook, D. M.	Julesburg	North East	North East	Elder, C. S.	Denver	Denver	Denver
Cooper, C. E.	Denver	Denver	Denver	Elder, E. A.	Denver	Denver	Denver
Cooper, H. S.	Denver	Denver	Denver	Edson, C. E.	Denver	Denver	Denver
Coover, D. H.	Denver	Denver	Denver	Edwards, E. G.	La Junta	Otero	Otero
Copeland, W. C.	Hotchkiss	Delta	Delta	Edwards, G. M.	Denver	Denver	Denver
Corlett, T. G.	Colorado Springs	El Paso	El Paso	Eichberg, S. B.	Denver	Denver	Denver
Corwin, R. W.	Pueblo	Pueblo	Pueblo	Eigler, C. O.	Denver	Denver	Denver
Covelle, W. W.	Blanca	San Luis Valley	San Luis Valley	Elliott, C. E.	Victor	Teller	Teller
Craghead, W. S.	Denver	Denver	Denver	Elliott, C. H.	Denver	Denver	Denver
Craig, A. C.	Denver	Denver	Denver	Elliot, H. R.	Denver	Denver	Denver
Craig, A. R.	Mesa	Mesa	Mesa	Elliott, J. T.	Denver	Denver	Denver
Craig, H. F.	Denver	Denver	Denver	Ellis, C. A.	Denver	Denver	Denver
Craig, Wm. B.	Denver	Denver	Denver	Ellis, J. W.	Denver	Denver	Denver
Craighead, J. W.	Denver	Denver	Denver	Elsner, J. L.	Denver	Denver	Denver
Crawford, E.	Hudson	Weld	Weld	Engelson, C. J.	Brookings, S. D.	Denver	Denver
Crawley, Z. T.	Monte Vista	San Luis Valley	San Luis Valley	Enos, Clinton	Denver	Denver	Denver
Creighton, B. B.	Manitou	El Paso	El Paso	Epler, Crum	Pueblo	Pueblo	Pueblo
Crews, Geo. B.	Denver	Denver	Denver	Erich, A. F.	Paonia	Delta	Delta
Crisp, J. D.	Denver	Denver	Denver	Espey, J. G.	Trinidad	Las Animas	Las Animas
Crisp, Wm. H.	Denver	Denver	Denver	Espey, J. R.	Trinidad	Las Animas	Las Animas
Crook, W. W.	Glenwood Springs	Garfield	Garfield	Evans, E. E.	Ft. Morgan	Morgan	Morgan
Crosby, L. G.	Denver	Denver	Denver	Evans, T. J.	Colorado Springs	El Paso	El Paso
Cross, J. W. S.	Telluride	Montrose	Montrose	Faith, A. H.	Pershall	Denver	Denver
Crouch, J. B.	Woodman	El Paso	El Paso	Fantz, T. S.	Denver	Denver	Denver
Cryer, W. H.	Colorado Springs	El Paso	El Paso	Farrand, L.	Boulder	Boulder	Boulder
Cunningham, A. A.	Denver	Denver	Denver	Farrington, F. H.	Boulder	Boulder	Boulder
Curfman, G. H.	Salida	Lake	Lake	Farthing, C. H.	Rio Blanco	Garfield	Garfield
Currihan, M. D.	Denver	Denver	Denver	Faust, F. A.	Colorado Springs	El Paso	El Paso
Curtis, H. B.	Denver	Denver	Denver	Fee, L. W.	Bristol	Prowers	Prowers
Curry, E. M.	Hastings	Las Animas	Las Animas	Ferris, C. A.	Denver	Denver	Denver
Dake, W. M.	Hot Springs, Ark.	Denver	Denver	Ferguson, J. H.	Colorado Springs	El Paso	El Paso
Dale, J. E.	Ft. Collins	Larimer	Larimer	Fezer, Florence	Greeley	Weld	Weld
Dally, H. H.	Walsenburg	Huerfano	Huerfano	Filmer, B. A.	Colorado Springs	El Paso	El Paso
Danahey, T. J.	Denver	Denver	Denver	Finney, Frank	La Junta	Otero	Otero
Daniels, J. H.	Cliff	North East	North East	Finney, H. S.	Denver	Denver	Denver
Darling, J. C.	Antonito	San Luis Valley	San Luis Valley	Finney, R. H.	Pueblo	Pueblo	Pueblo
Darrow, C. H.	Victor	Teller	Teller	Finnoff, Wm. C.	Denver	Denver	Denver
Davies, J. D.	Alamosa	San Luis Valley	San Luis Valley	Fischer, V. B.	Boulder	Boulder	Boulder
Davis, A. C.	Wiley	Prowers	Prowers	Fisher, Carl D. W.	Denver	Denver	Denver
Davis, A. L.	Durango	San Juan	San Juan	Fitzgerald, D. L.	Hartman	Prowers	Prowers
Davis, J. B.	Denver	Denver	Denver	Foley, John Wm.	Denver	Denver	Denver
Davis, T. A.	Portland	Fremont	Fremont	Ford, D. E.	Morley	Las Animas	Las Animas
Davis, Wm. H.	Denver	Denver	Denver	Ford, J. E.	Grand Junction	Mesa	Mesa
Davlin, C. A.	Alamosa	San Luis Valley	San Luis Valley	Forhan, T. J.	Calcite	Las Animas	Las Animas
Dawson, J. K.	Sterling	North East	North East	Forster, A. M.	Colorado Springs	El Paso	El Paso
Day, H. S.	Grand Junction	Mesa	Mesa	Foster, J. M.	Denver	Denver	Denver
Day, W. A.	Delta	Delta	Delta	Fowler, Harmon L.	Denver	Denver	Denver
Dean, E. F.	Denver	Denver	Denver	Fowler, Ora S.	Denver	Denver	Denver
De Armond, W. N.	Ft. Collins	Larimer	Larimer	Fox, M. R.	Sterling	North East	North East
De Beque, W. A. E.	Be Beque	Denver	Denver	Frank, Lorenz W.	Denver	Denver	Denver
Delehanty, Ed.	Denver	Denver	Denver	Frank, W. W.	Glenwood Springs	Garfield	Garfield
Dennis, F. L.	Colorado Springs	El Paso	El Paso	Fraser, M. Ethel V.	Denver	Denver	Denver
Denny, R. H.	Elbert	Denver	Denver	Freeman, Leonard	Denver	Denver	Denver
De Sobe, J. O.	Denver	Denver	Denver	French, Samuel	Meeker	Garfield	Garfield
Dewey, Albert W.	Denver	Denver	Denver	Freudenthal, A.	Trinidad	Las Animas	Las Animas
Didrickson, F. G.	Montrose	Montrose	Montrose	Friedman, Emanuel	Denver	Denver	Denver
Dodge, H. C.	Steamboat Springs	Routt	Routt	Friend, F. Milton	Lamar	Prowers	Prowers
Dodge, H. O.	Boulder	Boulder	Boulder	Fugard, A. L.	Pueblo	Pueblo	Pueblo

Name	Postoffice	County	Society
Fuson, C. C.	Milliken	Weld	
Gale, M. Jean	Denver	Denver	
Gallaher, T. J.	Denver	Denver	
Gardiner, C. F.	Colorado Springs	El Paso	
Garwood, H. G.	Denver	Denver	
Garvin, D. Edson	Golden	Denver	
Gengenbach, F. P.	Denver	Denver	
Gelien, Johanna	Denver	Denver	
George, McLeod M.	Denver	Denver	
Gibson, J. D.	Denver	Denver	
Giese, C. O.	Colorado Springs	El Paso	
Giffen, Clay E.	Boulder	Boulder	
Giffen, L. M.	Boulder	Boulder	
Gilbert, G. B.	Colorado Springs	El Paso	
Gilbert, O. M.	Boulder	Boulder	
Gillaspie, Carbon	Boulder	Boulder	
Gillett, O. R.	Colorado Springs	El Paso	
Gilmore, G. B.	Colorado City	El Paso	
Gjellum, A. B.	Del Norte	San Luis Valley	
Gleason, R. L.	Wellington	Larimer	
Gooding, B. A.	Ft. Collins	Larimer	
Goodloe, Hart	Cañon City	Fremont	
Goodson, H. C.	Colorado Springs	El Paso	
Gotthelf, I. L.	Saguache	San Luis Valley	
Graham, Chas. A.	Denver	Denver	
Graham, E. V.	Breckenridge	Lake	
Graham, R. F.	Greeley	Weld	
Grant, W. W.	Denver	Denver	
Grantham, O. A.	Johnstown	Weld	
Graves, C. H.	Cañon City	Fremont	
Green, H. A.	Haxtun	Denver	
Greene, J. L.	Eagle	Garfield	
Greig, Wm.	Sterling	North East	
Griffin, E. G.	Denver	Denver	
Griffith, B. F.	Leadville	Lake	
Groves, D. C.	Olathe	Montrose	
Grover, B. B.	Colorado Springs	El Paso	
Guthrie, Alice B.	Denver	Denver	
Guthrie, Ewing C.	Denver	Denver	
Guthrie, J. F.	Vineland	Pueblo	
Hadley, Edgar	Montrose	Montrose	
Hall, H. E.	La Junta	Otero	
Hall, Josiah N.	Denver	Denver	
Halley, W. H.	Pueblo	Pueblo	
Ham, Judson B.	Denver	Denver	
Hamilton, D. D.	Howard	Fremont	
Hanford, P. O.	Colorado Springs	El Paso	
Hanson, F. P.	Gunnison	Fremont	
Hanson, K. K.	Grand Junction	Mesa	
Hardesty, W. B.	Berthoud	Larimer	
Harlow, W. P.	Boulder	Boulder	
Harmer, W. W.	Greeley	Weld	
Herrman, L. L.	Alamosa	San Luis Valley	
Harris, Allan H.	Denver	Denver	
Harris, John W.	Denver	Denver	
Harrison, Fleet H.	Fraser	Denver	
Hart, J. A.	Geneva, N. Y.	El Paso	
Hartwell, John B.	Colorado Springs	El Paso	
Harvey, Horace G.	Denver	Denver	
Haskell, E. E.	Windsor	Weld	
Hassenplug, Wm. F.	Cripple Creek	Teller	
Hawkins, T. H.	Boundbrook, N. J.	Denver	
Hayes, A. I.	Victor	Teller	
Hayes, Oscar	Denver	Denver	
Hazlett, W. H.	Delta	Delta	
Healy, Michael D.	Denver	Denver	
Heath, Horace S.	Denver	Denver	
Hegner, C. F.	Denver	Denver	
Heller, Frederick M.	Pueblo	Pueblo	
Heller, P. H.	Pueblo	Pueblo	
Henderson, H. S.	Grand Junction	Mesa	
Henkel, F. W. E.	Silverton	San Juan	
Hépler, A. H.	New Castle	Garfield	
Hepp, G. Brinton	Denver	Denver	
Hereford, J. H.	Colorado Springs	El Paso	
Herrick, John C.	Denver	Denver	

Name	Postoffice	County	Society
Hersom, R. G.	La Junta	Otero	
Hess, Wm. L.	Denver	Denver	
Hetherington, A. J.	Boulder	Boulder	
Hick, L. A.	Delta	Delta	
Hickey, Clinton G.	Denver	Denver	
Higbee, O. F.	Fowler	Otero	
Higgins, John W.	Denver	Denver	
Hill, E. C.	Denver	Denver	
Hill, Julia T.	Denver	Denver	
Hills, W. K., Jr.	Colorado Springs	El Paso	
Hillkowitz, Philip	Denver	Denver	
Hinshaw, J. D.	Westcliffe	Fremont	
Hoag, D. E.	Pueblo	Pueblo	
Hoagland, H. W.	Colorado Springs	El Paso	
Holden, G. Walter	Denver	Denver	
Holmes, R. E.	Cañon City	Fremont	
Hopkins, G. A.	Glenwood Springs	Garfield	
Hopkins, John R.	Denver	Denver	
Horan, E. J.	Glenwood Springs	Garfield	
Horn, Andrew J.	Denver	Denver	
Horton, D. J.	La Salle	Weld	
Hornecker, John C.	Denver	Denver	
Hotchkiss, Walter K.	Brighton	Denver	
Howard, Chas. J.	Pueblo	Pueblo	
Howard, J. F.	Pueblo	Pueblo	
Howard, T. Leon	Denver	Denver	
Howell, Thos. F.	Creede	San Luis Valley	
Lane, Harold C.	Denver	Denver	
Larimer, G. W.	Salida	Lake	
La Rue, C. L.	Boulder	Boulder	
Lassen, Fritz	Pueblo	Pueblo	
Latta, C. J.	Haxtun	North East	
Lawney, Eleanor	Denver	Denver	
Lawson, J. A.	Rocky Ford	Otero	
Leavitt, Byron C.	Millbrook	Denver	
Lee, G. H.	Denver	Denver	
Lee, H. C.	Trinidad	Las Animas	
Lehan, J. W.	Greeley	Weld	
Lemen, L. E.	Denver	Denver	
Lennox, P. M.	Colorado Springs	El Paso	
Le Rossignol, M. J.	Rifle	Garfield	
Levy, Robt.	Denver	Denver	
Lewis, W. H.	Hotchkiss	Delta	
Levda, Paul	Boulder	Boulder	
Libby, Geo. E.	Denver	Denver	
Likes, L. E.	Lamar	Prowers	
Lincoln, C. L., Jr.	Denver	Denver	
Lindahl, John	Denver	Denver	
Lindsay, Kate	Boulder	Boulder	
Lingenfelter, G. P.	Denver	Denver	
Little, W. T.	Cañon City	Fremont	
Lockard, Lorenzo P.	Denver	Denver	
Lockwood, C. E.	Olathe	Montrose	
Lockwood, F. W.	Ft. Morgan	Morgan	
Löf, A. J. O.	Denver	Denver	
Long, Margaret	Denver	Denver	
Loomis, P. A.	Colorado Springs	El Paso	
Lord, H. A.	Pueblo	Pueblo	
Kelsey, Otis H.	Denver	Denver	
Kennedy, Arthur L.	Denver	Denver	
Kennedy, Geo. A.	Limon	Denver	
Kennelley, F. C.	Denver	Denver	
Kenney, F. W.	Denver	Denver	
Kernaghan, Wm.	Steamboat Springs	Routt	
Kickland, W. A.	Ft. Collins	Larimer	
Killough, H. B.	Pueblo	Pueblo	
King, A. T.	Pueblo	Pueblo	
King, D. M.	Denver	Denver	
King, Robt. W.	Denver	Denver	
King, W. W.	Cripple Creek	Teller	
Kinney, Julius E.	Denver	Denver	
Kleiner, Moses	Denver	Denver	
Knoch, N. H.	Denver	Denver	
Knott, A. W.	Montrose	Montrose	
Knott, Isaiah, Jr.	Montrose	Montrose	
Knowles, E. W.	Greeley	Weld	

Name	Postoffice	County	Society	Name	Postoffice	County	Society
Knowles, T. R.	Colorado Springs	El Paso		McClanahan, A. C.	Delta	Delta	
Knuckey, C. T.	Lamar	Prowers		McClanahan, Z. H.	Colorado Springs	El Paso	
Krohn, H. N.	Denver	Denver		McCleary, E. O.	Ordway	Unattached	
Krohn, M. J.	Denver	Denver		McClure, C. O.	Starkville (Trinidad)	Las Animas	
Kruse, May B. L.	Denver	Denver		McConnell, J. F.	Colorado Springs	El Paso	
Kunitomo, N.	Denver	Denver		McCorkle, H. B.	Colorado Springs	El Paso	
Lahmer, I. B.	Walsenburg	Huerfano		McDonald, A. J.	Leadville	Lake	
Lake, Mary	Ridge	Boulder		McDonald, R. J.	Leadville	Lake	
Lamberton, Robt. E.	Trinidad	Denver		McDonnell, J. J.	Pueblo	Pueblo	
Lamme, J. M.	La Veta	Huerfano		McEachern, C. G.	Denver	Denver	
Lamme, S. J.	La Veta	Huerfano		McFadden, J. G.	Loveland	Larimer	
La Moure, H. A.	Pueblo	Pueblo		McFarland, S. B.	Longmont	Boulder	
Hudston, R.	Denver	Denver		McGee, R. P.	Denver	Denver	
Hughes, T. A.	Denver	Denver		McGraw, H. R.	Denver	Denver	
Hummel, E. P.	Sterling	North East		McGugan, A.	Denver	Denver	
Hunnicut, W. P.	Pueblo	Pueblo		McHugh, P. J.	Ft. Collins	Larimer	
Hurst, W. N.	Center	San Luis Valley		McIntyre, T. A.	Cripple Creek	Teller	
Hutton, V. A.	Florence	Fremont		McKay, J. H.	Denver	Denver	
Inglis, John	Denver	Denver		McKeen, H. R.	Denver	Denver	
Ingraham, C. B.	Denver	Denver		McKelvey, S. R.	Denver	Denver	
Irwin, Robt. S.	Denver	Denver		McKeeney, G. P.	Denver	Denver	
Jackson, Edward	Denver	Denver		McKeown, E. E.	Denver	Denver	
Jackson, F. A.	Salida	Lake		McKenzie, O. D.	Denver	Denver	
Jaeger, Chas.	Denver	Denver		McKibbin, S.	Creede	San Luis Valley	
James, T. L.	Colorado Springs	El Paso		McKinnie, L. H.	Colorado Springs	El Paso	
James, Wm. D.	Denver	Denver		McLauthlin, H. W.	Denver	Denver	
Jayne, W. A.	Denver	Denver		McLauthlin, C. A.	Denver	Denver	
Jeannotte, J. A.	Leadville	Lake		MacLean, A. M.	Leadville	Lake	
John, Grant H.	Denver	Denver		McMichael, A. O.	Denver	Denver	
Johnson, E. E.	Cortez	San Juan		McNaught, F. H.	Denver	Denver	
Johnston, W. S.	Pueblo	Pueblo		Mead, Ella A.	Greeley	Weld	
Johnston, R. S.	La Junta	Otero		Meador, Chas. N.	Denver	Denver	
Jolley, W. A.	Boulder	Boulder		Menkel, H. C.	Simla, India	Denver	
Jones, Robt. E.	Ft. Morgan	Denver		Meredith, Peck H. H.	Montrose	Montrose	
Jones, S. Fosdick	Denver	Denver		Metcalf, A. W.	Henderson	Denver	
Jones, Wm. W.	Denver	Denver		Middlekamp, M. S.	Pueblo	Pueblo	
Joslyn, S. A.	Loveland	Larimer		Miel, Geo. W.	Denver	Denver	
Judson, A. R.	Manassa	San Luis Valley		Mierley, Ira. C.	Denver	Denver	
Keeney, M. J.	Pueblo	Pueblo		Miles, Amy B.	Boulder	Boulder	
Keep, Frank E.	Denver	Denver		Miles, M. E.	Boulder	Boulder	
Keesee, W. H.	Haxtun	Denver		Miller, Auston A.	Delta	Delta	
Kelley, John P.	Golden	Denver		Miller, L. A.	Colorado City	El Paso	
Lorimer, H. F.	Ordway	Unattached		Miller, H. C.	Del Norte	San Luis Valley	
Love, Minnie C. T.	Denver	Denver		Miller, Samuel W.	Denver	Denver	
Love, Tracy R.	Denver	Denver		Mills, Charles W.	Colorado Springs	El Paso	
Low, H. T.	Pueblo	Pueblo		Minnig, Arnold	Golden	Denver	
Lowen, Chas. J.	Denver	Denver		Mishkind, A. J.	Denver	Denver	
Lucas, Wilbur	Pueblo	Pueblo		Mitchell, Wm. C.	Denver	Denver	
Lunt, L. K.	Denver	Denver		Moleen, G. A.	Denver	Denver	
Lusby, A. C.	Brush	Morgan		Monaghan, D. G.	Denver	Denver	
Lyman, Chas. B.	Denver	Denver		Moninger, J. H.	Monte Vista	San Luis Valley	
Lyons, Oliver	Denver	Denver		Monismith, A. T.	Ft. Lupton	Weld	
Macomber, Geo. N.	Denver	Denver		Monson, G. L.	Denver	Denver	
Macomber, H. G.	Denver	Denver		Moore, A. M.	Denver	Denver	
MacLean, Luke	Pueblo	Pueblo		Moore, F. R.	Florence	Fremont	
Madden, J. H.	Colorado Springs	El Paso		Moore, Edward	Colorado Springs	El Paso	
Madler, N. A.	Greeley	Weld		Moore, W. M.	La Junta	Otero	
Magruder, A. C.	Colorado Springs	El Paso		Morgan, J. W.	Denver	Denver	
Magruder, A. C.	Colorado Springs	El Paso		Morning, J. F.	Denver	Denver	
Mahoney, J. J.	Colorado Springs	El Paso		Morrill, E. L.	Ft. Collins	Larimer	
Mann, Alfred	Denver	Denver		Morris, R. E.	St. Paul, Minn.	Boulder	
Manns, Rudolph	Denver	Denver		Morrish, R. W.	Ft. Collins	Larimer	
Marbourg, E. M.	Colorado Springs	El Paso		Morrison, C. S.	Colorado City	El Paso	
Markley, Arthur J.	Denver	Denver		Morrison, R. G.	Denver	Denver	
Marmaduke, C. V.	Pueblo	Pueblo		Morse, C. E.	Alamosa	San Luis Valley	
Marshak, M. I.	Edgewater	Denver		Mortimer, J. L.	Denver	Denver	
Martin, Herman H.	Denver	Denver		Morrow, E. L.	Oak Creek	Routt	
Martin, W. F.	Colorado Springs	El Paso		Moses, H. C.	Colorado Springs	El Paso	
Matthews, B. H.	Denver	Denver		Mugrage, E. R.	Denver	Denver	
Mathews, P. G.	Walsenburg	Huerfano		Mullin, W. V.	Colorado Springs	El Paso	
Matlack, J. A.	Galesburg, Ill.	Boulder		Murphy, P. A.	Denver	Denver	
Maynard, C. W.	Pueblo	Pueblo		Myers, J. T.	Hotchkiss	Delta	
Maxwell, J. G.	Cañon City	Fremont		Needham, Chas.	Grand Junction	Mesa	
McArthur, A. M.	Delta	Delta		Needles, J. W.	Pueblo	Pueblo	
McCartney, F. M.	Denver	Denver		Neeper, E. R.	Colorado Springs	El Paso	
McCarty, D. W.	Berthoud	Larimer					
McCaw, J. A.	Denver	Denver					

Name	Postoffice	County Society
Nelson, G. E.	Windsor	Weld
Neuhaus, G. E.	Denver	Denver
Nifong, J. D.	Denver	Denver
Noble, Mary R.	Colorado Springs	El Paso
Norton, D. O.	Ft. Collins	Larimer
Nossaman, A. J.	Pagosa Springs	San Luis Valley
O'Conner, J. W.	Denver	Denver
Ogilbee, H. M.	Manitou	El Paso
Ogle, W. M.	Bowen	Las Animas
O'Holloran, R. O.	Silverton	San Juan
Olmstead, G. K.	Denver	Denver
Olsen, D. G.	Keota	Weld
Oppenheim, S. M.	Denver	Denver
Oram, O. A.	Crested Butte	Boulder
Orendorff, Otis	Cañon City	Fremont
Orsborn, G. E.	Denver	Denver
Osborne, C. K.	Starbuck, Wash.	Lake
Packard, Geo. B.	Denver	Denver
Packard, Robt. G.	Denver	Denver
Palmer, W. A.	Castle Rock	Douglas
Parker, Thadd	Denver	Denver
Passover, Lucy L.	Denver	Denver
Pate, C. E.	Denver	Denver
Pattee, J. J.	Pueblo	Pueblo
Patterson, J. A.	Colorado Springs	El Paso
Patterson, W. O.	Pueblo	Pueblo
Peck, G. S.	Denver	Denver
Peebles, R. E.	Boulder	Denver
Pennock, V. R.	Longmont	Boulder
Perkins, C. C.	Denver	Denver
Perkins, J. M.	Denver	Denver
Perkins, I. B.	Denver	Denver
Pershing, C. L.	Denver	Denver
Pershing, H. T.	Denver	Denver
Pestal, Joseph	Lamar	Prowers
Peters, A. H.	Colorado Springs	El Paso
Phelps, E. M.	Basalt	Garfield
Philpott, J. A.	Denver	Denver
Peirce, F. J.	Pueblo	Pueblo
Pitney, Orville	Cheraw	Otero
Place, O. G.	De Beque	Denver
Plumb, Carl W.	Grand Junction	Mesa
Pogue, Geo. R.	Greeley	Weld
Poley, C. W.	Boulder	Boulder
Pollard, J. W.	Denver	Denver
Pollock, A. R.	Monte Vista	San Luis Valley
Pollock, R. M.	Rocky Ford	Otero
Porter, H. K.	Delta	Delta
Porter, R. B.	Fruita	Mesa
Pothuisje, P. J.	Denver	Denver
Powell, Cuthbert	Denver	Denver
Powers, Chas. A.	Denver	Denver
Pratt, Elsie S.	Denver	Denver
Presnall, C. W.	Trinidad	Las Animas
Prewitt, Francis E.	Denver	Denver
Price, Evelyn B.	Pueblo	Pueblo
Purcell, James W.	Denver	Denver
Queal, E. B.	Boulder	Boulder
Ragsdale, E. W.	La Junta	Otero
Ramaley, Francis	Boulder	Boulder
Ramsey, R. T.	Denver	Denver
Reed, C. W.	Grand Junction	Mesa
Reed, D. W.	Saguache	San Luis Valley
Reed, W. W.	Boulder	Boulder
Replogle, B. F.	Ft. Collins	Larimer
Rew, A. W.	Ft. Collins	Larimer
Rice, D. H.	Colorado Springs	El Paso
Rich, W. F.	Pueblo	Pueblo
Richards, D. F.	Denver	Denver
Richardson, H. L.	Silverton	San Juan
Richie, L. T.	Trinidad	Las Animas
Richmond, C. E.	Colorado Springs	El Paso
Richmond, G. E.	Center	San Luis Valley
Riddile, J. P.	Glenwood Springs	Garfield
Ringle, C. A.	Greeley	Weld

Name	Postoffice	County Society
Robbins, A. W.	Durango	San Juan
Robe, R. C.	Pueblo	Pueblo
Roberts, J. O.	Denver	Denver
Roberts, J. P.	Palisades	Mesa
Robertson, E. H.	Boulder	Boulder
Robinson, E. F.	Denver	Denver
Robinson, G. W.	Trinidad	Las Animas
Robinson, J. R.	Colorado Springs	El Paso
Roe, John F.	Denver	Denver
Roehrig, Karl F.	Denver	Denver
Rogers, E. J. A.	Denver	Denver
Rogers, F. E.	Denver	Denver
Rogers, J. S.	Kiowa	Denver
Rook, C. W.	Julesburg	North East
Root, M. R.	Denver	Denver
Rothwell, A. M.	Denver	Denver
Rothwell, E. J.	Denver	Denver
Rothwell, P. D.	Denver	Denver
Rothwell, Wm. J.	Denver	Denver
Rothrock, F. B.	Colorado Springs	El Paso
Rover, H. W.	Denver	Denver
Ruegnitz, L. H.	Denver	Denver
Rupert, L. E.	Florence	Fremont
Russell, E. M.	Berwind	Las Animas
Rutledge, J. A.	Woodman	El Paso
Sadler, E. L.	Ft. Collins	Larimer
Scannell, E. J.	Honduras	Las Animas
Schaefer, S. W.	Colorado Springs	El Paso
Schaffer, E. G.	Delta	Delta
Schermerhorn, F.	Montrose	Montrose
Scherrer, E. A.	Denver	Denver
Schneider, E. C.	Colorado Springs	El Paso
Schoen, W. A.	Victor	Teller
Schofield, J. V.	Colorado Springs	El Paso
Scott, A. R.	Ft. Collins	Larimer
Scott, Ira D.	Boulder	Boulder
Schwer, J. L.	Pueblo	Pueblo
Sedwick, Wm. A.	Denver	Denver
Seebass, A. R.	Denver	Denver
Senger, Wm.	Pueblo	Pueblo
Sewall, Henry	Denver	Denver
Shafer, Harry S.	Denver	Denver
Shapiro, J. M.	Denver	Denver
Sharp, G. L.	Colorado Springs	El Paso
Sharples, W. H.	Denver	Denver
Shea, R. M.	Denver	Denver
Sheller, W. O.	Lamar	Prowers
Shere, O. M.	Denver	Denver
Sherman, E. M.	Holly	Prowers
Shields, J. M.	Grand Junction	Mesa
Shipman, F. M.	Colorado Springs	El Paso
Shippey, O. P.	Saguache	San Luis Valley
Shivers, M. O.	Colorado Springs	El Paso
Shollenberger, C. F.	Denver	Denver
Shotwell, W. E.	Denver	Denver
Shultz, W. M.	Nederland	Fremont
Sickenberger, J. U.	Grand Junction	Mesa
Sidley, Frederick K.	Denver	Denver
Simon, Saling	Denver	Denver
Singer, W. F.	Pueblo	Pueblo
Skinner, M. G.	Washington, D. C.	Denver
Sloan, W. W.	Hayden	Routt
Smith, A. E.	Rifle	Denver
Smith H. A.	Delta	Delta
Smith R. G.	Denver	Denver
Smits, J.	Leadville	Lake
Snair, W. L.	Louisville	Boulder
Snedec, J. F.	Pueblo	Pueblo
Spangelberger, M. A.	Denver	Denver
Spaulding, W. F.	Greeley	Weld
Spencer, F. R.	Boulder	Boulder
Spicer, Chas. M.	Denver	Denver
Spicer, O. W.	Colorado Springs	El Paso
Spitzer, W. M.	Denver	Denver
Spivak, C. D.	Denver	Denver
Stahl, A. W.	Denver	Denver

Name	Postoffice	County	Society	Name	Postoffice	County	Society
Stanley, A. F.	Pryor	Huerfano		Weldon, Luther J.	Denver	Denver	
Staunton, A. G.	Denver	Denver		West, T. J.	Denver	Denver	
Steinberg, B. M.	Pueblo	Pueblo		Wescott, O. D.	Denver	Denver	
Steinhardt, E. H.	Pueblo	Pueblo		Wetherill, H. G.	Denver	Denver	
Stephenson, F. B.	Denver	Denver		White, H. T.	Avondale	Pueblo	
Stevens, F. T.	Colorado Springs	El Paso		White, H. W.	Fruita	Mesa	
Stevens, H. L.	Denver	Denver		White, W. J.	Longmont	Boulder	
Stewart, J. R.	Colorado Springs	El Paso		Whitmore, E. A.	Leadville	Lake	
Stewart, M. F.	Loveland	Larimer		Whitney, H. B.	Denver	Denver	
Stilwill, H. R.	Denver	Denver		Whittaker, D. L.	Mt. Harris	Routt	
Stirling, Margaret B.	Boyer	El Paso		Wilcox, H. W.	Denver	Denver	
Stoddard, T. A.	Pueblo	Pueblo		Wilkins, C. E.	La Porte	Larimer	
Stough, C. F.	Colorado Springs	El Paso		Wilkinson, C. H.	Cañon City	Fremont	
Stratton, Mary R.	Denver	Denver		Wilkinson, W. M.	Denver	Denver	
Strickler, D. A.	Denver	Denver		Willett, F. E.	Steamboat Springs	Routt	
Strong, J. C.	Leadville	Lake		Williams, A. F.	Ft. Morgan	Morgan	
Stubbs, A. L.	La Junta	Otero		Williams, S.	Denver	Denver	
Stuver, E.	Ft. Collins	Larimer		Williams, A. H.	Denver	Denver	
Sunderland, W. E.	Denver	Denver		Williams, W. W.	Denver	Denver	
Swan, W. H.	Colorado Springs	El Paso		Willson, M. O.	Ft. Morgan	Morgan	
Swartz, F. G.	Nederland	Boulder		Wilson, R. D.	Holly	Prowers	
Swerdfeger, E. B.	Denver	Denver		Winslow, W. H.	Ft. Collins	Larimer	
Tadlock, J. L.	Palisade	Mesa		Winston, A. L.	Colorado Springs	El Paso	
Taussig, A. S.	Denver	Denver		Witter, Roy V.	Elizabeth	Denver	
Taylor, A. G.	Grand Junction	Mesa		Wolfer, C. F.	Louisville	Boulder	
Taylor, C. F.	Pueblo	Pueblo		Wollenweber, L. C.	Denver	Denver	
Taylor, H. L.	Denver	Denver		Wood, W. H.	Greeley	Weld	
Taylor, R. R.	Pueblo	Pueblo		Woodbridge, J. H.	Pueblo	Pueblo	
Taylor, T. C.	Ft. Collins	Larimer		Woodcock, B.	Greeley	Weld	
Taylor, T. E.	Denver	Denver		Woodhull, A. A.	Denver	Denver	
Tennant, C. E.	Denver	Denver		Woods, W. P.	Longmont	Las Animas	
Tapley, L. V.	Denver	Denver		Work, Hubert	Pueblo	Pueblo	
Thompson, C. W.	Pueblo	Pueblo		Work, Philip	Pueblo	Pueblo	
Thompson, David	Denver	Denver		Worthington, A. K.	Denver	Denver	
Thompson, D. G.	Trinidad	Las Animas		Wright, R. E.	Loveland	Larimer	
Thompson, H. M.	Pueblo	Pueblo		Yates, W. W.	Niwot	Boulder	
Thompson, J. W.	Pueblo	Pueblo		Yont, Kate	Greeley	Weld	
Thompson, N. A.	Denver	Denver		Zederbaum, Adolf	San Diego, Cal.	Denver	
Thompson, W. E.	Greeley	Weld		Zener, Mary L.	Boulder	Boulder	
Timmons, E. L.	Colorado Springs	El Paso		Zillman, O. E.	Manzanola	Otero	
Todd, J. C.	Boulder	Boulder		Zimmerman, Wm.	Denver	Denver	
Tower, F. A.	Denver	Denver		Zinke, Wm.	Collbran	Mesa	
Triplett, T. A.	Denver	Denver					
Trossbach, Herman	Colorado Springs	El Paso					
Trout, A. L.	Walsenburg	Huerfano					
Trueblood, Chas.	Monte Vista	San Luis Valley					
Tubbs, W. R.	Carbondale	Garfield					
Tucker, Beverley	Colorado Springs	El Paso					
Turner, W. E.	Brush	Morgan					
Tygart, C. A.	Denver	Denver					
Vandenbergh, F. P.	Greeley	Weld					
Vanderhoof, D. A.	Colorado Springs	El Paso					
Van DerSchouw, G. E.	Fowler	Otero					
Van Meter, L. M.	Denver	Denver					
Van Meter, S. D.	Denver	Denver					
Van Zant, C. B.	Denver	Denver					
Vogt, H. J.	Pueblo	Pueblo					
Von Der Smith, P.	Denver	Denver					
Vroom, J. N.	Denver	Denver					
Wade, L. H.	Boulder	Boulder					
Wade, Pitt A.	Cañon City	Fremont					
Walker, A. G.	Superior	Boulder					
Walker, C. E.	Denver	Denver					
Wallace, G. C.	Denver	Denver					
Wallace, J. F.	Woodmen	El Paso					
Wallace, F. E.	Pueblo	Pueblo					
Waring, J. J.	Denver	Denver					
Warner, G. R.	Grand Junction	Mesa					
Wasson, W. W.	Denver	Denver					
Waters, P. A.	Monte Vista	San Luis Valley					
Watson, W. V.	Platteau City	Mesa					
Webb, E. C.	Cañon City	Fremont					
Webb, G. B.	Colorado Springs	El Paso					
Weber, Fred H.	Idaho Springs	Boulder					
Weber, Mary A.	Idaho Springs	Boulder					
Weld, J. C.	Denver	Denver					

MINUTES OF THE FORTY-EIGHTH ANNUAL
SESSION OF THE COLORADO STATE
MEDICAL SOCIETY, HELD AT
ESTES PARK, SEPTEMBER
9, 10 AND 11, 1918.

September 9—First Day—Morning Session.

The Society met in the Casino Building of the Hotel Stanley at 9 a. m. and was called to order by the President, Dr. Edward Jackson, Denver.

Dr. C. D. Spivak, Denver, read a paper entitled "Contributions of the Physicians of Colorado to Medical Literature", which was discussed by Drs. Crisp, Sewall, Freeman, and in closing by the essayist.

Dr. Julius L. Mortimer, Denver, contributed a paper on "Spastic Irritability of the Intestinal Tract", which was read by Dr. Crisp in the absence of the author.

The paper was discussed by Drs. Freeman and Matlack.

Dr. A. R. Pollock, Monte Vista, read a paper entitled "Four Surgical Stomach Cases, with Remarks", which was discussed by Drs. Lyman, Spivak, Buchtel, and in closing by the essayist.

Dr. G. P. Lingenfelter, Denver, read a paper on "Dermatitis Seborrheica". (No discussion.)

Dr. William M. Spitzer, Denver, read a paper entitled "Seminal Vesiculitis and Its Treatment", which was discussed by Dr. Davis, and in closing by the essayist.

First Day—Afternoon Session.

The Society reconvened at 2 p. m. and was called to order by the President.

Dr. E. J. A. Rogers, Denver, read a paper entitled "The War's Influence Upon Prevailing Medical Theories", which was discussed by Drs. Sewall, Moleen and Gilbert, and in closing by the essayist.

Dr. George A. Moleen, Denver, read a paper on "Insanity; Its Prevention and Treatment". Discussed by Drs. Rogers, Sewall, Holmes, and La-Moure, and in closing by the essayist.

Committee on Provision for the Insane.

At the conclusion of the discussion on Dr. Moleen's paper, Dr. David A. Strickler moved that the President appoint a committee of three to draft resolutions to be submitted to the House of Delegates tomorrow, and that this committee also prepare to present a suitable bill to the legislature this fall to carry out the desires of the Society. Seconded.

Dr. Moleen suggested that the committee should not include any of the men who devote themselves to nervous and mental diseases, for obvious reasons.

Motion put to a vote and carried.

The President appointed as members of the committee called for by Dr. Strickler's motion, Dr. David A. Strickler, Chairman, Dr. G. A. Boyd, and Dr. R. E. Holmes.

Dr. Foster H. Cary, Denver, read a paper entitled "Necessary Cooperation in Prenatal Care and Obstetrics", which was discussed by Drs. Ferris, Gale, and in closing by the essayist.

Dr. J. W. Morgan, Denver, read a paper on "Birth Registration in Colorado", which was discussed by Drs. Sharpley, Mead, Chipman, Strickler, and in closing by the essayist.

Dr. M. R. Fox, Sterling, read a paper entitled "Breech Presentations", which was discussed by Dr. Bush, and in closing by the essayist.

First Day—Evening Session.

The Society reconvened at 8 p. m. and was called to order by the President, after which Dr. J. H. Bush, Second Vice-President, took the Chair, and President Jackson delivered his address.

Colonel John R. Barber, United States Army, delivered an address on "Medical Matters Connected With the Military Service."

Dr. H. G. Wetherill, Denver, followed with an address entitled "The Nation's Need of Doctors and Nurses for the Army".

September 10—Second Day—Morning Session.

The Society met at 9 a. m. and was called to order by the President.

Dr. Emanuel Friedman, Denver, read a paper entitled "The Von Pirquet Test and Results of Its Use in Four Hundred and Sixty-Four Colorado Children".

Dr. George H. Cattermole, Denver, read a paper entitled "Tuberculosis in Children".

These two papers were discussed together by Drs. Gengenbach, Blickensderfer, Gilbert, Marshak, Sewall, McConnell, Giese, and in closing by the authors of the papers.

Dr. O. M. Gilbert, Boulder, read a paper entitled "Work of the Army Tuberculosis Board", which was discussed by Drs. Sewall, Cattermole, Gengenbach, Henderson, Spivak, and in closing by the essayist.

Dr. S. W. Schaefer, Colorado Springs, read a paper entitled "Rest in the Treatment of Pulmonary Tuberculosis", which was discussed by Drs. Marshak, Spivak, Sewall, Meader, Gilmore,

McConnell, Boyd, Friedman, and in closing by the essayist.

Dr. Frost C. Buchtel, Denver, read a paper on "Blood Transfusion".

This paper was discussed by Drs. Carmody and Pollock, and in closing by the essayist.

Second Day—Afternoon Session.

The Society reconvened at 2 p. m. and was called to order by the President.

Dr. M. D. Shivers, Colorado Springs, read a paper entitled "Surgical Treatment of Pulmonary Tuberculosis", which was discussed by Drs. McConnell, Friedman, and in closing by the essayist.

Dr. Henry Sewall, Denver, read a paper on "Important Deficiencies in the Medical Curriculum—Climatology, Hydrology and Gymnastics".

This paper was discussed by Drs. Meader and Gilbert, after which the discussion was closed by the essayist.

Dr. C. E. Tennant, Denver, presented a paper entitled "Eversion of Tissue Margins in Wound Approximation", which was discussed by Dr. Hegner.

Dr. Leonard Freeman, Denver, read a paper entitled "A Method of Hemostasis in Resecting Portions of the Liver", which was discussed by Drs. Henderson and Shivers, after which the discussion was closed by the essayist.

Dr. Moleen read a communication from Major W. W. Grant, M. C., of Fort Logan.

Dr. Mary R. Stratton, Denver, read a paper on "Water Hemlock Poisoning", which was discussed by Drs. Jackson and Shippy.

Dr. William Senger, Pueblo, read a paper entitled "Fractures of the Tibia", which was discussed by Dr. Andrew and in closing by the essayist.

Dr. H. P. Brandenburg, Denver, read a paper entitled "X-Ray Treatment for Superficial Malignancy; a New Coolidge Tube Technic", which was discussed by Dr. Senger, and in closing by the essayist.

September 11—Third Day—Morning Session.

The Society met at 9:40 a. m. and was called to order by the President.

The Secretary read the following report of the Committee on Necrology:

REPORT OF THE COMMITTEE ON NECROLOGY.

Since the last meeting of our Society, seven members have died.

Alvin R. Peebles, M. D., a member of Boulder County Medical Society, died October 22, 1917, aged 23 years. He received his medical degree from the University of Michigan, 1906; became a member of the State Society in 1908; was a member of the faculty of the medical department of the University of Colorado, and in charge of the Dennison Research Laboratories at the time of his death.

John Chase, M. D., a member of Denver County Medical Society, died March 3, 1918, aged 62 years. He received his medical degree from the medical department of the University of Michigan in 1881. He became a member of the State Society in 1885. He was Professor of Diseases of the Eye and Ear in the medical department of the University of Colorado for a number of years.

Lucian D. Campbell, M. D., a member of the Denver County Society, died August 27, 1917, aged 59 years. He received his medical degree from

the University of Vermont in 1886. He became a member of this Society in 1909.

John C. McGillivray, M. D., a member of the Denver County Society, died February 11, 1918, aged 53 years. He received his medical degree from Trinity Medical College, Toronto, in 1889. He was elected a member of the Colorado State Medical Society in 1911.

George F. Roehrig, M. D., a member of the Denver County Medical Society, died February 17, 1918, aged 57 years. He received his medical degree from Jefferson Medical College, Philadelphia. He became a member of the State Society in 1897.

Frank Grove McKlveen, M. D., a member of the Denver County Society, died April 22, 1918, aged 50 years. He received his degree from the Western Pennsylvania Medical College in 1892. He became a member of the State Society in 1911. Herbert Aaron Lord, M. D., a member of Pueblo County Society, died May 15, 1918, aged 45 years. He received his medical degree from Gross Medical College in 1898. He was elected a member of this Society in 1906.

J. G. Hughes, M. D., of Greeley, died on January 4, 1918, aged 57 years. He graduated at Northwestern University Medical School, 1892. He was a resident of Greeley and engaged in active practice there for the past fifteen years.

Each of these men in accord with his measure worked for the alleviation of suffering, for the maintenance of public health and for the advancement of medical science; and each at his death left a circle of grief, and a gap in the ranks of our Society. It would ill become a Society like ours to dwell upon our own losses while the pall of death hangs so darkly over the whole world as it does today. These gaps in our own ranks should but remind us of our increased responsibility to work for the benefit of suffering humanity.

E. B. QUEAL.

Dr. John B. Hartwell, Colorado Springs, read a paper entitled "Diagnosis of Fractures of the Spine".

Discussed by Drs. McHugh, Brandenburg, McNaught, Chipman, Boyd, Burnett, Gilbert and Robertson, and in closing by the essayist.

Dr. Melville Black moved that the resolution proposed by the House of Delegates relative to members in active service be adopted.

Seconded and unanimously carried.

Dr. Black also moved that the preambles and resolutions with regard to the attitude and policy of the State Society in respect to insanity, as recommended by the House of Delegates, be adopted.

Seconded and carried.

The President appointed Drs. Chipman and Ringle to escort the newly elected President, Dr. F. H. McNaught, to the platform, and in introducing his successor, Dr. Jackson said: It is unnecessary for me to introduce a man who has been a member of the Society for so long. He was a member of this Society before I was. It gives me very great pleasure to present to you Dr. McNaught. (Applause.)

Dr. McNaught, in accepting the presidency, said: I would not be quite honest with myself if I did not say I was more than pleased with the action of this Society in making me your presiding officer for the coming year. It is a position, I am sure, any man should be proud to occupy. I have been away from Colorado for a few months and have been impressed with what it means to be a resident of Colorado, with what

it means to be associated with the medical fraternity of Colorado, and I am sure, after hearing the many kind remarks from the medical men of the east, we should all be proud of our Colorado State Medical Society, and I want to ask you all to take the same interest in the coming year and give me the same assistance that you have given in times past. I thank you. (Applause.)

C. W. MAYNARD,
Secretary.

Psychological Handling of Tuberculosis—

Charles L. Minor, of Asheville, North Carolina, discusses the psychological handling of the tuberculous patient in the American Review of Tuberculosis for October. In no disease is the relation between mind and body so close and so important as in pulmonary tuberculosis. This fact must be recognized as an important factor both for prognosis and treatment, and the complete confidence of the patient obtained. A proper personal atmosphere is important for the welfare of the patient and is often better obtained in an institution than in the home, especially in a cottage sanatorium where a group of patients, socially and financially compatible, are all educated to a proper attitude toward each other and toward themselves. It is essential that the patient be seen for proper psychic treatment as well as supervision. At first twice a week, and after thorough acquaintance is established once a week, should be enough. When office visits become feasible a fifteen minute interview twice a week and an hour for physical examination once a month is sufficient. The study of the mental side of the case will become so fascinating that the handling of the case becomes a pleasure rather than a task.

The tuberculous are by no means always or even often abnormal, as has been implied by some writers, though there is a good deal of neurasthenia and hysteria among them and they are apt to have a rather labile temperament. When one considers the terrifying effect for a person ignorant of the real nature of tuberculosis of first learning that he is suffering from this disease, it is no great wonder that it causes a fearful upset of his mental poise and easily produces in any but the most phlegmatic or the most self-controlled a temporary neurasthenia. There is no such school of character as tuberculosis bravely met and rightly faced. No doctor could want a more splendid work than to have a part in teaching these patients to master the bitter sorrow of sickness. He must be hopeful in order to inculcate hope. While there are many that cannot be saved there are also many who can be restored to working efficiency for long periods or for good, and even in the long drawn out chronic cases life can be made useful and filled with interests and happiness if the patients are but taught to face it aright.

New and Nonofficial Remedies: During October the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion with New and Nonofficial Remedies:

Hynson, Westcott and Dunning: Lutein Tablets, H. W. and D., 2 grains.
Eli Lilly and Company: Pneumococcus Antigen (Rosenow), Lilly.

Colorado Medicine

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Editorial Comment

INFLUENZA, IN 1890 AND IN 1918.

In most parts of this country the mortality from the influenza epidemic is greatly lower than it was. In Colorado and in other regions at least two distinct waves of the epidemic have already occurred. Can the outbreak now be regarded as definitely on the decline? Shall we soon be free from it? How long will it continue in an attenuated form? Will it be limited to the winter season of 1918-1919?

The present epidemic is regarded as parallel to that of 1890, in which a great many persons now living were sufferers. What lessons as regards the present epidemic may be drawn from that of twenty-eight years ago? An answer to this question is attempted by W. A. Evans and M. O. Heckard, of the Chicago Department of Health (*American Journal of Public Health*, vol. 8, p. 845). The material for the study was taken from the yearly reports of the Chicago Health Department for the years 1888 to 1894 inclusive.

In January, 1890, Chicago, with a total population of something over 1,100,000, had, according to the estimate of the health commissioner of that time, 100,000 citizens suffering from influenza alone. The epidemic of 1890 in Chicago was of about four months duration, beginning in January and continuing through April. In the week of highest mortality there were 694 deaths in the city. (In the present epidemic, the week of highest mortality in Denver showed 265 deaths; the estimated population of Denver at this time being about 250,000.)

Last winter pneumonia of a severe type

was unusually prevalent, especially in the large military training camps. There is at least a possibility that the outbreak of pneumonia in the winter of 1917-1918 bore some relation to the present so-called influenza epidemic. An analogy for this sequence of conditions is to be found in the records of 1889 and 1890; for we are told that pneumonia was unusually prevalent in Chicago in 1889. In 1891 the combined incidence of influenza and pneumonia in Chicago appears to have been even more serious than in 1890, for during March and April of 1891, says the annual report of the then health commissioner, "there were 3,400 deaths in each month, largely due to pneumonia and influenza, which seemed to be epidemic." We are further informed that the disease prevailed as late as 1893. The number of deaths was highest among persons between the ages of twenty and forty years. The greatest increase above the expected was in the deaths of persons over sixty years of age. Children of school age seemed to enjoy some relative immunity.

If the analogy of history has any value, therefore, we must anticipate the persistence for several years of an abnormally high incidence of acute diseases of the respiratory tract; and every step practicable should be taken along educational, hygienic, and other prophylactic lines to confine the danger within the narrowest possible limits.

PRECAUTIONS AGAINST INFLUENZA.

To resort to a word which became somewhat hackneyed in connection with the great war, there are so many "imponderables" which enter into the consideration of every great epidemic that it is almost impossible

to arrive at a nicely balanced judgment as to what is and what is not worth while by way of precaution against infection.

Thus, thousands of physicians who are daily exposed to large numbers of severely infected patients, and who themselves employ very little if any care to shun communication of the disease, have escaped unscathed through the present epidemic. Indeed, it is very doubtful whether the proportion of physicians who have become infected has been any greater than among the rest of the population.

The city of New York, which did not close up anything and did not use masks, has been so successful or so fortunate that its deaths from pneumonia, which in the week ending October 26th amounted to 2,251, had fallen as low as 80 in the week ending November 30th. Denver, which in the prohibition of public gatherings has, although rather spasmodically, taken much more radical action, has certainly fared no better than New York as regards death rate. San Francisco insisted on the mask. Los Angeles was hot against it. Denver and other cities ordered that all street car windows should be opened. In the early fall, Chicago organized a campaign to have all buildings well heated and sued landlords who refused to supply heat; and also warned the public against the dangers of cold and wet feet.

New York attributes its success in dealing with the epidemic to the provision of adequate quarantine and hospital facilities, to education of the public, and to a thorough system of inspection of school children. As early as October 1st, Chicago ordered the quarantine of all influenza cases, and also isolation of influenza cases in hospitals. (Pneumonia has for a number of years been subject to quarantine in Chicago.) In Chicago, instead of closing the schools, the following measures were adopted to prevent the spread of the disease: (a) open window ventilation of all school rooms; (b) pupils warmly dressed; (c) daily thorough inspection of all pupils; (d) pupils coughing or sneezing sent home at once; (e) daily check on absentees in all schools.

There have not been wanting cynics who urged that the wider open everything remained the sooner the epidemic would be over, for the sooner those who were so constituted as to contract the disease would have it and be done with it. We are familiar with a similar argument concerning all the contagious diseases of childhood. It is to be hoped that wide success will attend the increasing employment of protective serum; although we can probably not look for such brilliant results by this method in influenza and pneumonia as have been demonstrated in relation to smallpox and typhoid fever. In the meantime, it is well to remember that relative protection against almost any kind of infection is conferred by attention to the fundamental principles of health, namely a due alternation of work, recreation, and rest, a sufficiency of exercise and an abundance of fresh air without unnecessary exposure to chilling of the body surface, proper quantity and quality of food, and last but not least that calm and cheerful habit of mind which stands in relation to the sound body as much for cause as for effect.

It is doubtful whether in any large community the public will tolerate attempts to cope with the epidemic by a prolonged arrest of normal commercial, educational, and social activity among the healthy. What is needed is to separate the sick from the well; and it is impossible to do this either by means of the limited public health organization so parsimoniously tolerated in normal times, or by supplementing the official organization by appeals to the public and the medical profession for voluntary action which they often fail to take. If we consider merely the tremendous interference with the economic future of our children, and therefore of the community at large, involved in a prolonged closure of the public schools, we ought at once to realize how stupidly wasteful is our failure to provide, at the cost of a few thousands of dollars, that thorough medical inspection which, broadly regarded, should be the means of avoiding the ultimate loss of millions of dollars in productivity, to say nothing of precious lives.

ROENTGENOLOGY A MATURE SCIENCE

Soon after its discovery the roentgen ray became a very popular subject of comment, because it lent itself so well to spectacular demonstrations with the fluorescent screen, and because it served as food for the imagination of writers in the semiscientific vein. Physicians themselves were not backward in hopeful speculation and prediction as to its future possibilities in medicine, and, while their enthusiasm received a check following the first few years of experimenting, it is remarkable that within the short period of twenty-three years from its discovery it has fulfilled the most favorable anticipations of the saner minds of that time.

But it is questionable whether even now the members of the profession at large are aware that the shortcomings of earlier days have been surmounted and that the competency of the roentgen ray in both diagnosis and treatment is well established; at least it is true that they do not fully realize its value in gastrointestinal and thoracic diagnosis. They were slow in giving way to disappointment and suspicion in the beginning and are now equally slow in throwing aside the unfavorable opinion they eventually acquired. To convince one that the roentgen ray cannot now be justly neglected, it is necessary only to compare any of the current medical and surgical journals with those of a few years ago and to note the greater prominence now given to roentgenology in the literature of our profession. The advance thus shown has been made possible by the invention and development of apparatus which provides the x-ray worker with reliable and effective tools for his painstaking investigations. The perfecting of gastrointestinal diagnosis by means of the opaque meal through the work of such men as Cole, George Leonard, Carman and Case of this country, and foreign roentgenologists, has resulted in a standardization of methods and x-ray evidence, so that today a correct diagnosis is possible in about ninety-five per cent of cases of gastric and duodenal pathology and very helpful data are available in cases referable to that scapegoat of surgery, the vermiform appendix.

Perhaps more of the past uncertainty and controversy pertained to the chest than to any other part of the body; and the controversial attitude of the roentgenologists themselves has served to emphasize the feeling of the internist that the x-ray was somewhat of a disappointment in chest conditions. This was natural, for it is true that the work of the past was experimental and accompanied by the theorizing and speculating which are a part of the development of any undertaking along unexplored lines. Patient studies of anatomical and pathological details of the structures of the chest, even to the working out of the lymphatic distribution by microscopic serial sections, have been a part of the work of this formative period of a new branch of medical science.

There has just been published an official United States army x-ray manual (see Book Reviews, p. 312), prepared under the direction of the division of roentgenology, a division represented by the most noted roentgenologists of this country. It brings together in practical order the present-day knowledge of the subject, and exhibits the same terseness and definiteness in outlining procedures as have characterized the instructions to army medical examining boards. Although it is a working manual and not exhaustive in any particular, one is struck with the fact that it is complete; it covers the entire ground, even to exposure timing, a subject which authors have in the past been chary of handling.

Books on this subject are appearing one after another. Kennon Dunham has published in the November number of the American Review of Tuberculosis a complete manual of the roentgenological examination of the chest; Carman and Miller are authors of a recent book dealing minutely with the alimentary canal; a new edition of Knox on radiography and radiotherapeutics has appeared within the past year; a work on technique by Prince is recent. Is it not significant that we are getting the literature of this field of medicine collated and presented to us in book form, and especially that the information can be put into a working manual containing exact instructions for

all phases of practice, wanting in uncertainties and accurate in detail?

This can only mean that the formative period in roentgenology has been passed and that future changes will likely be those of refinement in interpretation, an advance such as we expect in any live branch of medicine. Technic may change with future discoveries in physics and with mechanical invention, but the important feature, interpretation, seems to be at last upon a sound basis. Roentgenology has outlived the trials of infancy and youth to stand before us in the full vigor of maturity.

F. B. S.

THE CAMPAIGN, FEDERAL AND LOCAL, AGAINST VENEREAL DISEASE.

There are many today who believe that one of the most important political problems before this country is that of increasing federal control over matters of national interest and significance which are now neglected because of the restrictions imposed by "states' rights." Few national interests have more to gain from a proper coordination between central supervision and local activity than the ever-widening field of public health.

When the United States government started the campaign against venereal diseases most of us approved the good intention but shook our heads as to the possibility of accomplishment. Medical men, depressed and discouraged by the apathy which had ruled both in their own ranks and among the general public in regard to the enforcement of regulations concerning public health, questioned whether anything more would come of the new movement than the passage of an endless series of laws and by-laws which would promptly be relegated to oblivion. But the war, which has stimulated the ingenuity of federal departments in finding ways around the constitution, has in this case also not merely created a very earnest desire to cope with the venereal problem along practical lines, but also invented a pathway along which the United States Public Health Service may proceed to direct and

regulate the activities of the individual states.

Out of the billions of money appropriated by our national legislators for war purposes, the relatively modest sum of one million dollars has been set aside for distribution among the states, in proportion to their population, for the use of their respective boards or departments of health in the prevention, control, and treatment of venereal diseases during the year ending June 30th, 1919. While this allotment of funds arises out of the special emergency created by the war which is now ended, there is good ground to believe that the needs of the army will furnish a basis upon which an enlightened national opinion will continue even in peace to sanction annual appropriations for a like purpose.

State boards or departments of health receiving allotments out of this fund must agree to cooperative measures including legislative enactment or regulations in conformity with suggestions approved by the Surgeons General of the army, navy, and United States Public Health Service; the reporting of venereal diseases to the local health authorities, with a penalty for failure to do so; investigation for the control of sources of infection; the assignment of an officer of the Public Health Service to each state receiving an allotment, for the general purpose of cooperating with the state health officer in supervising the venereal control work in the state; the simultaneous employment of local funds for the same purposes; a local educational campaign; and limitation or suppression of the activities of advertising "specialists" and quacks. The officer of the Public Health Service assigned to each state is to be selected by the state health authorities and to be approved and recommended for appointment by the Surgeon General of the Public Health Service. His salary, except a nominal sum of ten dollars per month which will be paid by the Public Health Service, is to be paid by the individual state out of the funds made available from the allotment; and he is to have well defined duties as to securing reports of cases, as to carrying out suppressive measures including isolation and treatment of

infected persons, as to the extension of laboratory facilities for exact diagnosis, and scientific determination of condition before release as noninfectious, as to the education of the public and of infected persons, as to cooperation with local civil authorities for the suppression of prostitution, and as to the keeping of permanent records.

It is interesting to note that extensive use of salvarsan, which is referred to as arsphenamine, is definitely contemplated in the wording of the regulations.

* * * * *

An ordinance which seems likely to furnish a much closer control over the proper treatment and reporting of cases of venereal disease has been passed by the Denver City Council. This ordinance provides that no remedy for the relief or cure of any venereal disease shall be sold within the city and county of Denver except upon the original written prescription of a licensed practicing physician; and that druggists and other persons filling such prescriptions or selling medicine for the purpose shall keep records thereof and shall within forty-eight hours report to the city health department the name, address, and occupation of each patient.

AN INTERNATIONAL ORTHOPEDIC JOURNAL.

An interesting announcement is made by the American Journal of Orthopedic Surgery, to the effect that this periodical, in addition to continuing to act as the official organ of the American Orthopedic Association, will from January, 1919, serve also as the official organ of the newly formed British Orthopedic Association. The journal is the only periodical publication in the English language entirely devoted to orthopedic surgery. Perhaps the war has developed no more striking rapprochement than that between the eminent orthopedists of England and of the United States. It is significant that the two national organizations which will henceforth be represented conjointly in journalism include among their respective memberships the Director General of Military Orthopedics for the United

States, Colonel Brackett, and the Inspector of Military Orthopedics for the British Empire, Major General Sir Robert Jones. It is to be hoped that the decision which occasions the announcement of the American Journal of Orthopedic Surgery may prove of happy augury for a closer cooperation, not merely in fields of medicine and surgery, but in other lines of progress and philanthropy, between the two groups of English-speaking people.

Original Articles

INFECTION-EXHAUSTION PSYCHOSES.*

C. W. THOMPSON, M.D., PUEBLO.

Psychiatry has participated in the remarkable progress of the medical sciences in the past decade, and our knowledge and understanding of mental diseases and of the reactions that underlie mental disorders has been very materially increased.

With the introduction of better methods of case taking, including better histories, more careful physical, neurological and psychological examinations, combined with careful observation, in conjunction with exact chemical, physiological and biological laboratory procedures, our vision of psychiatry and neuropathological conditions broadens wonderfully. Laboratory investigations of nutrition, metabolism, fatigue and nervous energy have aided materially in our understanding of the infection-exhaustion psychoses.

In conjunction with a consideration of this group, it will be of interest to examine into the mechanism by means of which the infections act as causes of mental diseases. In a few cases the reaction of the nerve centers is the result of direct micro-organismal invasion, as in rabies and sleeping sickness. In all the infectious diseases, mental symptoms may and frequently do appear, and they are commonly present in serious illness preceding death. Fever may be the cause of these disturbances or may exag-

*Read at the annual meeting of the Colorado State Medical Society, September 25, 26, 27, 1917.

gerate them. These symptoms are not looked upon as psychoses, but as accessories of the infection process.

Psychoses of infective origin usually appear during the period of convalescence or later when the infective process is at an end; they are considered to be secondary effects of the infection, and are attributed to the formation of secondary toxalbumins, bacterial proteins and intracellular toxins, the secondary disturbances of metabolism, or alterations of the viscera coincident with emaciation and inanition.

At times infections leave no apparent disease behind, but weaken the bodily resistance, thus creating a predisposition, which later, under the influence of other factors, may give rise to a true mental disease. At other times the mental disease may be the result of an infection in an individual predisposed to cerebral disturbance. The infection stimulates the latent predisposition, which would not have become manifest without this or similar stimulus. Psychoses, other than those of this group, such as dementia precox, are sometimes observed following infections and exhausting conditions, and in these cases the above factors merely added fuel to a fire already burning.

The brain may be damaged directly or indirectly by the infections: directly by means of the toxins produced by the infections, or elaborated in the tissues as an evidence of the reaction of the organism against them; indirectly by changes produced in the cardiovascular system, in the glandular structures or in other viscera.

The question of exhaustion as a factor in the production of mental disorders is a complex one and many questions with reference to fatigue have not yet been solved. Fatigue is due to functional activity; or rather results from the formation of poisonous substances in the breaking down of tissues. The nervous structures are affected by the toxins which are poured into the circulation from the fatigued muscles. Exhaustion is considered to be the result of a consumption of the active elements of the tissue, thereby reducing functional capacity and organic resistance.

Kraepelin of Munich first described and

introduced the infection-exhaustion psychoses. The group is a fairly large one and comprises from two and one-half to five per cent of all admissions to mental hospitals. General practitioners are specially interested in this group since it embraces psychotic disturbances into which the various infections enter as the etiologic factor as well as psychotic states which are presumably due to physical, nervous and mental exhaustion and which give similar clinical reactions. Psychoses dependent upon the acute febrile diseases are included as well as some mental disturbances occurring in the more chronic diseases and afebrile nutritional disturbances.

Temperature and infection are not necessary requisites in the production of this type. Factors capable of producing a rapid and profound exhaustion of the vital forces; prolonged physical stress, prolonged mental stress with distressing emotional reactions, prolonged and difficult labor, post partum and other forms of severe hemorrhage, post partum infection, prolonged lactation in poorly nourished women, typhoid fever, pneumonia, influenza, malignant disease, pellagra, chronic nephritis, non-compensating heart disease, chronic tuberculosis and anemic states are frequently found in the history of the disease. Thus we see that the etiological factors may be very widely different, yet the etiological relationship is usually satisfactorily recognized.

As a rule the mental symptoms arising on this morbid process are dulling of the attention, incoherence (the speech productions of the patient lack a guiding idea), false sense perceptions and disorientation (the patient cannot understand his relation to his surroundings with reference to time, place, persons and objects). Consciousness is clouded and there is marked confusion. The association of ideas becomes slow and disordered; delusions are common, many of them being based on false sense perceptions. There is motor slowness and indecision, and the patient becomes very uncertain in his attitude toward his surroundings. He may and frequently does become unduly excited. The disease may present a prodromal period of insomnia, cephalalgia, marked restlessness

and increasing irritability, with anorexia. Violent and destructive tendencies may develop early. The mental symptoms are associated with great physical debility; prostration and exhaustion. Nutrition is disturbed and the patient is greatly reduced in flesh. There are insufficient alimentation, disordered digestion and faulty assimilation. Cardiovascular atony develops, blood pressure is lowered, the pulse is feeble, with cardiac irregularity, and cyanosis and edema of the extremities frequently occur. The tongue is heavily coated, constipation is usually present, though an offensive diarrhea may occur. Albuminuria and indicanuria are inconstant symptoms.

Kraepelin describes two types of exhaustion psychoses, collapse delirium or the acute delirious mania of the older writers and amentia or acute confusional insanity. The difference between the two is in the severity of the mental symptoms. In the first type the psychic symptoms are profound incoherence, absolute clouding of consciousness, marked emaciation and severe exhaustion. Many of these patients die in a stuporous comatose condition. In the acute confusional type the psychic faculties are less affected. In this type the duration of the attack varies from one to several months. In a few cases recovery may take place in a few days or weeks.

The insanity of the puerperal state is usually of the acute confusional type, though the manic depressive psychoses in the depressed, manic or mixed phases may occur. Dementia precox may be latent in a limited number of pregnant women and may be lighted up by the stress incident to pregnancy. In other words, the insanity of the puerperal woman is the same insanity she would have developed with her make-up and predisposition in the presence of any other stress or similar exhausting influence.

The period of convalescence may at times be very protracted. In the unfavorable cases, death occurs from collapse in the hyperacute form; from inanition; also at times from infection following traumatism in the less rapid cases.

As to recovery from the psychosis, the

prognosis is very good, and while many of these cases appear dangerously ill and hopelessly confused, they do recover promptly, and there is consolation in the fact that of all forms of mental alienation this form is least likely to recur, recovery being complete without mental deterioration.

The principal elements in diagnosis are the acute confusion, the multiform hallucinations, variable and changing delusions, marked clouding of consciousness and marked instability of the emotional trends, coupled with the physical signs of great exhaustion or specific infection.

Other forms of mental disease may originate under the same conditions which lead to the development of the infection-exhaustion psychoses.

In the army of the United States in peace, mental disorders are responsible for one-fifth of the total discharges of the enlisted men. Mental diseases cause more disability, temporary and permanent, than any other disease, tuberculosis not excepted. In the Canadian army nervous and mental diseases represent over ten percent of the total casualties.

The Surgeon General of the army has recognized the very great importance of providing special care for mental cases and in conjunction with the National Committee for Mental Hygiene has caused to be formed psychiatric hospital units which are to be attached to base and other military hospitals. Many specialists in this line of work are now on duty at the various army cantonments examining recruits, and by their efforts many of the mentally deficient and inefficient are excluded from the army.

Many of the disorders occurring at the front are of the infection-exhaustion type, due to general fatigue, loss of sleep, sudden, profound and prolonged emotionalism, exhausting exposure, excessive physical exertion, homesickness. In some instances the above factors are combined with trauma. In many cases it is difficult to determine the relative value of the physical and mental factors.

Case Histories.

The first case report is one of acute confusional insanity associated with pellagra.

Female, age forty-five years. Family history did not disclose evidence of syphilis, tuberculosis, pellagra or neuropsychotic disease. Personal history: nativity, Ohio; early life of patient uneventful; married at age of twenty-two and is the mother of four healthy children; has resided in Colorado continuously for fifteen years. She came under observation after a period of one month, during which time she was psychotic. Physically, her condition had not attracted attention. Upon admission to the hospital she appeared sad and confused, was hallucinated and restless. The skin over the backs of her hands and wrists was very dark, scaly and dry and numerous cracks were present. She was reduced physically, and there was slight stomatitis; no diarrhea. Blood count normal. Hemoglobin seventy-five percent. Wassermann negative in blood serum and spinal fluid. Mentally, she was greatly confused and unable to give an account of herself. At times she could not tell her name. There was a marked memory disturbance and inability to retain new impressions. Orientation was greatly impaired. She did not volunteer information about herself and could not cooperate in any way. At times she expressed fear as a result of hallucinations of sight and hearing.

She improved gradually as to the cutaneous manifestations, physical and mental symptoms. Her convalescence was interrupted by periods of confusion and suspicion, but she progressed to complete recovery except for amnesia for events of her illness.

Pellagra is probably a nutritional deficiency disease and the treatment is largely dietetic. The dietary included a liberal allowance of red meats, eggs and rich milk. Deep muscular injections of cacodylate of sodium, five-tenths gram, were given twice a week for a month and once a week for two months.

The case is of special interest from the fact that the pellagra developed in Colorado. Investigation of the diet of this patient before she came under observation revealed the fact that she had abstained from the use of meats for many years, that she had used little or no milk, that she lived

largely on canned (tinned) vegetables and drank tea excessively.

Case two is one of acute confusional insanity associated with pernicious anemia. Pernicious anemia is a fairly common disease in general hospital practice in Colorado. As to the importance of pernicious anemia for the production of a definite pathology in the brain little is known, but its relation to the production of characteristic lesions in the spinal cord has long been known. The greater number of mental cases reported as occurring in pernicious anemia have been of the infection-exhaustion type.

Female, age forty years. Mother died of Bright's disease at age of fifty-three. Father died at age of seventy from a gunshot wound.

Personal history: nativity, Kansas; early life of patient uneventful; twice married and twice divorced; has one healthy child, a boy of twenty-two years; several miscarriages; in poor health for two years, during which time she complained of headache and suffered from gastric disturbances; lost in weight.

Mental symptoms were present for two weeks before her commitment to the hospital. On admission she was confused and could not give an account of herself. Physically, she was greatly reduced; weight, ninety pounds; height, five feet seven inches. The mucous membranes were anemic; tongue, anemic and tremulous; skin, brown and pigmented; cardiac sounds sharp and valvular, hemic murmur at base; spleen enlarged. The Romberg symptom was present; gait was very unsteady and the knee jerks overactive; Babinski reflex present on both sides. The blood showed 1,808,000 red cells, forty percent hemoglobin by the Sahli method and cell findings pathognomic of pernicious anemia. Urinalysis negative. Wassermann in the blood serum was negative and the spinal fluid was negative serologically and cytologically.

Mental condition: She appeared sad and confused. Consciousness was greatly clouded and it was very difficult to get her attention. She was almost totally disoriented for time, place and persons, and was frequently restless, uneasy and talkative at

night. There were disturbances of perception and illusions and hallucinations of sight and hearing. There was marked amnesia for all events of her illness. The mental symptoms gradually improved and the improvement was coincident with improvement in the physical symptoms. She was under treatment for a period of six months, at the end of which time she had gained thirty pounds in weight and was mentally clear. The neurological disturbances of course continue, though she is now able to work some and live at home.

Case three. Male, age thirty years. Merchant. During convalescence from typhoid fever he became moody and irritable; found fault with his nurses and wanted frequent changes. He became suddenly worse; thought his people were dead and that he would be killed. On admission he was very greatly confused; commented on things that happened but could not grasp the substance. He was actively hallucinated, having both visual and auditory hallucinations. His ideas changed rapidly and his orientation was greatly disturbed. He talked frequently of death, but could not explain. The case improved rapidly and was thoroughly well mentally in four weeks.

Case four. Female, age thirty-five years. Family and personal history negative. Had a severe post partum hemorrhage. On the eighth day following, she became restless and excited and would not remain in bed. Excitement increased and she became very apprehensive. Continued restless and did not sleep for seventy-two hours. Upon admission to the hospital there was marked emotional weakness and she appeared dull, unable to collect her thoughts, and her answers to questions were fragmentary and incoherent. Hallucinations and illusions were present and at intervals she cried out in great fear. Recovery was slow and for some time it was necessary to feed her by means of the nasal tube.

As to treatment, these cases can best be cared for in properly equipped mental hospitals. Primarily the treatment is that of the underlying disease. Isolation and rest in bed to avoid, to the fullest extent, all external impressions and exciting influences.

The matter of elimination is an important one and requires early and constant attention. Hydrotherapy is of great value, and restlessness, insomnia and excitement are best controlled by the application of the warm bath, the warm or neutral sheet pack, or the prolonged neutral bath. When sedative baths are no longer necessary, tonic effects are secured through the cold pack, followed by the douche and massage. In the quiet, apathetic cases the peripheral circulation is stimulated by the warm bath. The question of diet is an important one and the dietary should contain a liberal amount of easily digested, nourishing food. If the patient refuses food, there should be no delay in resorting to artificial feeding by means of the soft rubber nasal tube. If the stomach is irritable, rectal feeding may be resorted to. Many of these cases show a condition of marked dehydration and should be encouraged to take water freely. Hypnotics should be used with great caution. Depressants and stimulants lessen the patients' chances for recovery; whereas baths, packs, elimination and tactful nursing increase them. During convalescence moderate exercise is helpful and carefully selected occupation aids in directing the mental processes into normal channels, thereby accelerating the course of convalescence.

One must be assured of complete recovery before patients are discharged from treatment and allowed to resume their former occupations and responsibilities.

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DISCUSSION.

E. E. Delehanty, Denver: I wish to compliment the doctor on his very practical paper on this interesting subject of mental diseases that come sometimes in the train of somatic or surgical conditions. I do not think there is anything more tragic to a physician or a surgeon than to have a patient who has been treated for some ordinary disease, like typhoid fever, or who has had a simple operation and has suddenly become deranged. As the doctor has said, it is not what is usually associated with a fever, but what is known as frank mental disease—delusions, hallucinations, and illusions. A patient who a doctor supposes is getting along nicely suddenly, like lightning out of a clear sky, becomes a menace

to himself and others and requires to be sent to an institution. I say it is tragic, and the physician often wonders why it is that a patient with typhoid fever or some other of the somatic diseases should suddenly become insane. He has treated numerous cases. There is nothing unusual in the condition for which he has instituted treatment. He has given no unusual medicine, and naturally he wonders why it is that in this particular case the patient has become insane. He looks about for a cause.

I think probably the doctor did not emphasize the other factor besides those of infection and exhaustion which usually exists in these cases, and that is the factor of an underlying neuropathy. If many of these cases are studied, we will find that before the existence of this mental trouble, there was some peculiarity in the individual. I remember particularly a case of Dr. Freeman's. He had operated on a woman for exophthalmic goiter, and it was not an unusual condition. It was an ordinary case, and a few days after the operation she became suddenly maniacal. She had delusions, hallucinations, and confusion as the doctor has mentioned. In a careful analysis of this case it was found she had had, long before she suffered from exophthalmic goiter, an attack of melancholia and that her brother had died a suicide in an institution. I merely relate this case to show that in many of these instances there is a more important condition of underlying neuropathy than in the character or nature of the infection or exhaustion.

I remember another case of a surgeon performing a simple abdominal operation, that of ventrofixation. During the course of the woman's recovery she became delusional. She had ideas that the surgeon was trying to get rid of her; that all kinds of preparations were being made in the hospital to dispose of her; she gradually became worse, and it was necessary to send her to an institution. In fact, shortly after she left the hospital she was taken to her home, it being felt that the environment of the hospital was influencing her mental condition. When she got home these ideas persisted. She left the house one night and before she was found she had arrived in a distant city. She was brought back and put in a hospital at Denver.

Dr. Thompson (closing): In connection with the worldwide crisis which is now upon us, it is recognized that the issue will largely be decided by brain power, and mental efficiency transcends all else in its importance. The subject of mental diseases has been very forcibly impressed upon the medical and military authorities of the warring countries. If anything I have said will be the means of stimulating new foci of interest in psychiatric problems, I shall have been greatly repaid.

PYORRHEA ALVEOLARIS.*

W. F. DREA, D.M.D., COLORADO SPRINGS.

Importance of Proper Functioning of the Jaws.—The usually adopted translation of Wolf's law of bone transformation is: "Every change in the form and function of a bone or of its function alone, is followed by

*Read before the El Paso County Medical Society, June 12, 1918.

certain definite changes in its internal architecture, and equally definite secondary alterations in its external conformation, in accordance with mathematical laws." Murphy more tersely expressed the law when he stated, "The amount of growth in a bone depends upon the need for it". In brief, a bone has the power of adapting itself to the burden it has to bear.

The osteoblasts are at all times building and unbuilding bone, according to the stresses to which they are subjected. It is as necessary for their health that they be subjected to stress as it is that anybody be exercised. It is the stress to which the osteoblasts are subjected that determines the form of a bone.

The foregoing statements enable us to appreciate more fully the necessity of giving the growing jaws plenty of resistance to overcome. When we consider how the muscles of mastication are attached and the great power that may be developed by these muscles when functioning, we realize there must be stress brought to bear upon the parts of the skull to which they are attached as well as upon the jaw. Wolf's law leads us to realize that as a result there must be reaction with the osteoblasts in the tion as the muscle stresses are normal this



Fig. 1. Schema showing arrangement of roentgenograms, and record of data revealed by them for dental examination.

development of these bones, and in proper reaction will be normal.



Fig. 2. Man, age about 50 years, received severe blow on right jaw. Four weeks after, swelling and severe pain developed in lower jaw at an angle. Two weeks further elapsed before the patient was referred for a roentgenogram, which showed extensive destruction of bone, both in the body and in the ramus. The plate was also of great value in indicating the great care that must be used in the removal of the two posterior molars for drainage, lest fracture of the jaw should occur.

Two roots of an upper molar are also shown incidentally, imbedded in the tissues.

Baker experimented on rabbits by grinding down all the teeth on the right side of the lower jaw and the upper right central at the time of weaning. As these ground teeth elongated, they were reground. At the end of seven months, one of these skulls showed a deviation of the bones to the left, the suture between the frontal and parietal bone not at right angles to the long axis of the skull, the right frontal bone projecting further forward than the left, a striking deviation in the nasal bones, both being twisted to the left, and the left zygomatic

space longer and more advanced than the right space. The deviation extended throughout the skull. The lower jaw was also distorted even as to the size of the articular process. On the unused side, the muscles were atrophied. The skulls weighed less than those of the controls. These experiments were repeated on sheep and the same general results secured.

Thus, by experiment, was produced in the skull what might have been predicted from Wolf's law. Every suture and bone was altered.

Mosher noted that wherever there was a moderate and equal delay in the eruption of the upper central incisor teeth the premaxillary wings were symmetrically enlarged at the floor of the nose and there was no deviation of the septum. When, however, there was a marked inequality and delay in the eruption of one central incisor as compared with the other, then on the side of the backward tooth, the premaxillary wing was much enlarged or displaced and the quadrangular cartilage was tipped out of its bed along the vomerethmoid suture and as a result there was deviation of the septum. Here we have a localized deformity due to abnormal stress. Such a retardation of one tooth could have happened as a result of premature lancing of the gum overlying that particular tooth, the resulting scar tissue being too resistant for the erupting tooth to penetrate. It is well for this reason to warn against premature or insufficient lancing of the gums overlying erupting teeth.

From the above facts I think it is safe to conclude that it is important that the infant be required, when fed by means of the bottle, to exert the same force as when securing its nourishment from the breast. The nipple should be so formed that this is possible. During the mastication of food it is also important that the growing individual be required to overcome considerable resistance. Not only will the jaws be better developed and more room be secured for the eruption of teeth having stronger periodontal membranes, but the bones of the cranium and face will be better developed and more normal conditions will be secured.

for the important organs and chambers they bound. Foods that require the vigorous use

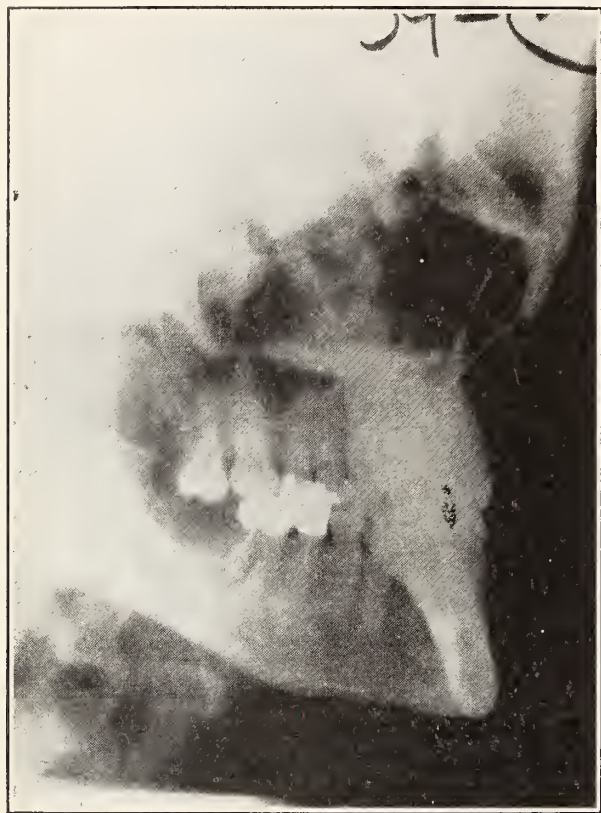


Fig. 3. Extraoral plates are also of great value when they indicate more than ordinary difficulty in the extracting of teeth. The above shows, besides the diseased condition of the root ends of the lower second bicuspid and first molar, the great density of the bone embracing them. Such teeth cannot be extracted without fracturing the roots. This latter fact is of increased importance when the patient is at the same time suffering from the ill effects of some systemic disease. Such teeth as these should be removed, but only after a flap of the overlying periosteum has been thrown back and the bone dissected away.

of the muscles of mastication should be chosen. Proper functioning of the jaws and teeth is a necessary precedent to the well being of the teeth, of the jaws, and of the directly and indirectly related structures, and to the prevention of dental lesions that may come about as late as in adult life.

Pyorrhea Alveolaris. This term is usually employed to designate all diseased conditions of the investing tissues of the teeth, and as such is a misnomer. A chronic suppurating condition of the peridental membrane is more clearly described as "chronic suppurative pericementitis". Such a term as "pyorrhea alveolaris" is wrong because, for one reason, it is likely to mislead the pa-

tient, dentist and physician. If there is failure to find pus, no such condition as that described by "pyorrhea alveolaris" is present. But there may be infection and chronic inflammation present that may be just as serious as, and in some cases terminate in, the suppurating condition described as pyorrhea. And because this non-suppurative condition is not properly recognized and described, it is too frequently overlooked and dismissed from mind or not properly treated, both by the dental and the medical adviser. The result is that instead of arresting these pericemental troubles in their incipency they are allowed to progress to a point where it is next to impossible or impossible to get rid of them without extracting the teeth. When the disease is limited to the gum tissue, it may be referred to as gingivitis or interstitial gingivitis. When this has progressed so far that there is involvement of the peridental membrane, without pus, it may fitly be described as pericementitis. When there is pus present in pericementitis and the condition is not chronic, we have the "acute suppurative pericementitis". Therefore, leading up to the chronic suppurating condition of the peridental membrane we have the following sequence: gingivitis or interstitial gingivitis, pericementitis, acute suppurative pericementitis, and chronic suppurative pericementitis. The more advanced cases are complicated by involvement of the cementum and of the alveolus.

In the majority of cases, with the probable exception of those where the fusiform bacilli and the spirochetes are concerned, it seems necessary for their occurrence that the gums and peridental tissues be in a state of lowered resistance. This state of lowered resistance may be the result of trauma from deposits of salivary calculus, irritating dental restorations, etc., or of certain systemic conditions such as diabetes, Bright's disease, scurvy, leukemia, pellagra, autointoxication, and pregnancy. Some of the acute diseases and the toxic action of certain drugs such as mercury and iodine also make it possible for the gums to easily become infected. Any condition leading to a constriction of the peripheral blood vessels

of those tissues will bring about a lowered resistance to infection.

The organisms concerned are bacteria, amebae, spirochetes, or a combination of these.

The proper treatment of these lesions of the gums and peridental lesions will depend upon a consideration of the factors above stated.

Where local injury and bacterial infection are the factors concerned, removal of the cause and application of iodine to the diseased tissues will bring relief provided the peridental membrane has not been involved too much.

Where there is a predisposing systemic condition exerting its influence, it must be corrected or local treatment can only be palliative at the most. If amebae are present in large numbers, emetin should be used. Many writers do not think that amebae are to be seriously considered or that the emetin treatment has been successful. If the principles laid down by Smith and Barrett are closely followed, however, we feel certain greater success will be obtained by others. The cases must be properly selected, and fresh, properly prepared solutions of the drug used as directed. Where spirochetes are concerned, local treatment with arsenic in some form should be given. Of the spirochetel infections more will be said later.

Most of these cases are treated by scaling or planing the roots with the object of removing deposits of salivary or serum calculi and by applying antiseptics such as iodine. This is proper where there are deposits to be removed and the infection is bacterial only. But where there are no deposits to remove, where the predisposing cause is systemic, or where the amebae or the spirochetes are the organisms principally concerned, this treatment is irrational. There is too much instrumentation in many cases and many times it is positively harmful instead of beneficial.

It is urged therefore that those cases not plainly due to local causes and bacterial infection be examined for the presence or absence of amebae and spirochetes and that it also be determined whether or not an ab-

normal systemic condition may be a factor. This should be done especially in those



Fig. 4. Patient had considerable swelling of neck in region of angle of lower left jaw. Lower molars appeared to be devitalized and were suspected of being septic. Extraoral plates showed calcified submaxillary gland and intraoral films showed that teeth were not involved.

cases not responding to the usual treatment by local instrumentation. It must be kept in mind that an abnormal systemic condition may be present which because of its incipency may not be detected, although it is sufficiently harmful to affect the mouth.

Some idea of the area of surface involved may be grasped by noting that if the root or roots of each tooth be infected to a depth of one-quarter of an inch, the total area with thirty-two teeth would be about seven and one-half square inches.

Vincent's Disease of the Gums. A disease of the gums and peridental membranes that may easily be erroneously diagnosed as pyorrhea alveolaris is due to an apparent association of fusiform bacilli and spirochetes. Because it is apparently identical with "trench gum", so frequently reported

as affecting the soldiers in France, and because our own soldiers upon their return



Fig. 5. The value of extraoral plates is well illustrated by the above cut. Both molars shown are impacted, and the lower molar was completely imbedded in the tissues. By comparing the density of the shadow cast by the investing bone with that of the tooth it will be seen that the bone must be very dense. Such proved to be the case when the writer chiselled away the bone preparatory to removal of the lower molar.

from duties overseas will most likely present many cases, it is advisable to discuss it. It is our opinion also that more of the civilian population have peridental lesions caused by Vincent's organisms than is generally supposed.

McKinstrey found the gums infected three times more frequently than the tonsils and every case of Vincent's angina gave a history of previous infection of the gums and was accompanied by the gum infection. As the tonsil most likely becomes infected from the gums, it is important to realize this connection. Unless the diseased condition of the gums is cleared

up entirely the tonsils will most likely become reinfected.

General ill-health and oral sepsis, cold, dampness, and unsanitary surroundings have been looked upon as factors related to the etiology, though a strikingly large number of cases have been observed where the mouth was well cared for. There is no doubt, however, that lack of oral hygiene plays an important part.

The disease is not widely infective, though it can be conveyed by means of pipes, kissing, cigarette-holders, etc. Because of the number of cases of infection not the result of contagion, McKinstrey thinks that the best explanation of its occurrence is in the frequency with which these organisms lead a saprophytic life in apparently healthy mouths.

The ulceration may be confined to the margins of the gums and may be difficult to detect. When there is no greater involvement, the submaxillary glands are not affected. In other cases the gums and peridental membrane may be affected to the depth of a quarter of an inch or more and then the glands are enlarged and tender. The ulcers are covered with a white friable membrane, which is easily removed, leaving a bleeding surface beneath. There are usually foul breath, pain, bleeding, and bad taste. Unless pyogenic organisms are also present, there is no pus. Ordinarily, there is no rise of temperature nor constitutional disturbance although there may be severe mental depression. The pain is sometimes very severe. The absence of pus (unless there is infection also by pyogenic organisms) and the demonstration of many fusiform bacilli and spirochetes, combined with the clinical findings described above, make the diagnosis certain.

As to treatment, the surfaces of the teeth must be in a smooth, non-irritating condition and the gums free from contact with all irritating foreign bodies. The toothbrush should be kept in an antiseptic solution when not in use, thus being kept soft and aseptic. Application to the gums of the following:

R Vini ipecacuanhaeoz. ss
Glycerinidr. 1

Liquoris arsenicalis ad.....oz. 1

M. Sig: To be used as mouth wash; do not swallow.

Label: "Poison".

or of neosalvarsan once or twice a day is specific and should be continued until smears show no fusiform bacilli or spirochetes. Frequent use of a mouthwash should be urged and the patient required to place ten to fifteen drops of the ipecac-arsenic solution on his tooth brush and brush his teeth after meals. If there should now be some inflammation or pus present it will be due to bacteria and these may be destroyed by injecting a one percent solution of iodine in normal saline solution or a two percent solution of the tincture of iodine into the pockets. No case should be discharged as cured until there is complete absence of bleeding points, or there will almost certainly be a relapse. New tooth-brushes should now be used.

Besides the tonsils, the mucous membrane of the mouth may be affected, though these conditions are accompanied by diseased gums. The buccal mucous membrane infection is rare, compared with that of the tonsils and the gums. The same treatment as above is indicated.

Dental Examination. I wish now to submit to you a plan for a complete oral examination. Nothing short of a thorough examination should be tolerated when a dental or jaw lesion is suspected as being connected with some other pathological condition. There are altogether too many snap judgments rendered in this class of cases; five minutes or thereabouts is given to the examination when a considerably longer time is by the very nature of things absolutely necessary. A superficial examination is worse than useless, as the patient is falsely assured as to the condition of his mouth. The plan is:

1. Secure a history of the individual teeth, as to past trouble or treatment. This knowledge is often of great value in reaching a decision as to their present condition.
2. Secure roentgenographic plates of the jaws on both sides. A general survey of the field is thus secured and at times valuable

information obtained that would be discovered in no other way.



Fig. 6. Patient troubled with trigeminal neuralgia and arthritis. Plate shows sclerosis of the bone between root apex and inferior dental canal. A similar condition has been known to cause neuralgia because of the pressure on the inferior dental nerve.

3. Make note of any abnormal condition of the soft tissues of the mouth. (One result would be that many of the mouth cancers would be discovered earlier.)

4. Note missing teeth by number, adopting some systematic method of going over the teeth so that none will be overlooked. Missing teeth may be impacted and be the cause of referred pain.

5. Note all cavities, nearly exposed or exposed pulps, erosion, diseased periodontal membranes, etc.

6. Note all teeth opaque to daylight. Dead teeth are generally opaque.

7. Note all teeth opaque to transillumination by the electric mouth lamp.

8. Note teeth sensitive to percussion.

9. Note teeth failing to respond to stimulation by the faradic current, bearing in

mind that large fillings and gold crowns make this test of no value.

10. Note teeth, marked "doubtful" as a result of above examinations, giving abnormal response to stimulation with heat or cold.

11. With intraoral films, secure roentgenograms of all teeth suspicious as a result of above tests.

12. Record findings on a chart suitably drawn up to represent roots and root canals of the teeth.

13. Draw conclusions from the above data. Alone, none of the factors above referred to is conclusive in every case, and for that reason it is urged that use be made of them all in every case. For example, a tooth pulp may be infected and absorption from this source be going on with no lesion that can be demonstrated with the x-ray.

Oral Prophylaxis During Illness. The great value of prophylaxis in dentistry cannot be disputed and it is unfortunate that greater use is not made of it. It is true, however, that many people do make an earnest attempt to keep their mouths free from diseased teeth. It is of these people I wish to speak. My observations since I started to practice dentistry nine years ago have shown that when these same people became afflicted with disease, acute or chronic, little or no attention, with few exceptions, has been given by their physicians to the hygiene of their mouths. This is wrong. Patients should be encouraged at all times to look after the welfare of their teeth. Nurses should be so trained that they could clean the teeth of their patients, and until they are the dentist should be called in more frequently. This, of course, applies particularly in chronic cases.

Many people who fully appreciate the value of oral hygiene and who are accustomed to it have septic conditions in their mouths before the end of a long illness. Many physicians realize the possible ill effects of septic foci and some are not slow to condemn dentists for establishing these foci, yet there are very few who will do anything to help prevent these conditions when the patients are under their charge. Healthy teeth should never become septic if properly kept clean, and this is much easier

and less expensive for the patient than the filling of cavities or the treatment of dis-



Fig. 7. Roentgenogram of the left jaw of a girl eighteen and a half years old. For eighteen months previous, she suffered from persistent headache, frontal and occipital; from the latter only occasionally but more intensely. Eyes, ears, nose, and tonsils were normal, according to her physician, who discovered no factor that might be associated with the headaches, other than impacted teeth that he suspected were present. A roentgenogram showed all third molars present, the lower apparently impacted.

The last three or four months previous to removal of lower third molars, she became increasingly neurotic and brooded much over very slight difficulties. She took absolutely no interest in the life that usually appeals to girls of her age.

During the six months since operation there has been much improvement, though complete restoration to normal has not been attained. Patient wishes to return to school, but has been advised not to by her physician. Eats better, sleeps better, and is not so depressed.

This extraoral plate is of value in showing the importance of keeping in mind the probability of "exceptions to the rule." At this age the non-eruption of the third molars is not abnormal. Close study of the above cut will show, though, that in this case the uncompleted root is pressing upon the inferior dental canal, and the crown is lodged against the second molar. Bearing in mind that the Roentgen rays were directed from behind forward it will be seen that the impaction may be greater than shown by above illustration. Such proved to be the case at time of operation. A similar, but not so pronounced condition, existed in the other jaw.

eased gums. The physician whose patient's teeth become badly diseased while he is under treatment is not doing his full duty by that patient.

The above applies in those cases where the patient begins his long illness with his mouth healthy. It is the physician's part to so direct matters that this mouth will stay healthy.

As for those cases where there may be septic foci already established, I will content myself with quoting the following by R. H. Babcock: "As it seems to me, the physician is not doing his full duty in the management of any chronic infection unless he endeavors to search out the possible etiological factor or factors and, on discovering infective foci, advises their removal." The following is by C. H. Mayo: "With the recognition of the fact that many of the acute and chronic diseases, local and general, arise from a local focus, the most common source being the mouth, the true importance of dentistry is now recognized and a dentist should be associated with every clinic and hospital, or subject to consultation call."

Summary.

1. It is important that the infant use its sucking muscles vigorously and that the growing individual overcome resistance in masticating food.

2. The treatment of the peridental lesions requires a consideration of a possible predisposing systemic condition and infection with amebae or fusiform bacilli and spirochetes in addition to the usual local injuries and bacterial infection.

3. Vincent's disease of the gums, because of its highly probable increase upon the return of the soldiers from overseas duties, and because there are more cases of this disease occurring in the civilian population than is generally suspected, should be borne in mind when cases of diseased gums and peridental membranes present themselves for treatment.

4. A complete dental examination should be insisted upon when a dental lesion is suspected as a causative factor in some other pathological condition. The roentgen ray or any other means of examination is not infallible in every case.

5. The importance of oral hygiene in illness should be kept in mind. Patients suffering from a long disease should not develop septic dental lesions when at the beginning of the illness the teeth are healthy. Patients suffering from chronic systemic disturbances should have any septic dental lesions present eliminated.

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A CASE OF LARYNGEAL OBSTRUCTION COMPLICATING MEASLES.*

HARRY L. BAUM, M.D., DENVER.

It is a well known fact that the respiratory complications of measles are the most frequent and the most fatal ones and Osler states that "membranous laryngitis is second to pneumonia as a cause of death in measles." True diphtheria often complicates these cases and has been a frequent

*Read before the Medical Society of the City and County of Denver, November 6, 1917.

cause of death, but it is also possible for the complicating laryngitis to progress to complete stenosis without the diphtheritic invasion and without the formation of membrane, as in the following case:

The patient, a baby girl of two years and four months, became sick with slight fever and cough following exposure to measles. On the second day the fever reached one hundred and three and the cough was increased, coming on at intervals so severely as to cause vomiting, and a provisional diagnosis of measles was made by Dr. Oppenheim, who was called to see her on that day. The cough continued, with attacks of dyspnea, during the next day and the rash appeared that night on the face, although it was not well defined. The choking spells were not severe enough to cause alarm, were thought to be nothing more than the laryngismus that is expected from laryngeal involvement in these cases, and were so treated. However, by the fourth day of the disease the obstruction had become so marked that breathing was difficult at all times although no cyanosis was evident except during the paroxysms of cough. At these times the patient would become quite blue, according to the statement of the parents. Her general condition was not so good on this day, pulse quality only fair, the temperature fell to one hundred and the rash disappeared entirely. A pharyngeal culture was taken and was later reported negative. That evening I saw her for the first time, in consultation with Dr. Oppenheim. Her condition had progressed considerably since morning. The effort to breathe was very noticeable. The head was thrown back, there was indrawing of the supra-sternal and supra-clavicular spaces and the epigastrium with the inspiratory effort, and puffing of the tissues of the neck with the expiratory effort. The pulse was of fair quality, temperature still one hundred. Pharyngeal examination revealed nothing more than the slight acute inflammation of the mucous membranes that might be expected. Laryngeal examination was not attempted at that time for obvious reasons. There was practically no cyanosis; the nails and lips were slightly bluish,

but the ears were pink and the face clear, although pinched and drawn. It appeared that she was getting enough oxygen for maintenance of life but with such effort that she was rapidly becoming exhausted. Before concluding the examination there was a sudden change for the worse; the pulse became very rapid and weak, she broke out in profuse perspiration, her hands and feet became cold and her color quite dusky although cyanosis was even now not marked. The effort to breathe continued, but with noticeable weakening, and it was evident that prompt action was necessary if her life was to be saved. Consequently I opened the trachea without further loss of time and her condition was so critical that there was no resistance whatever and very little bleeding, although the color of the blood was surprisingly good. Following the introduction of the tube her condition began to improve almost immediately. The respirations were now free and unhampered and she fell asleep and slept through the night with apparent comfort. By morning the temperature had returned to its former height and the rash had reappeared very strongly and was general. The course of the infection from now on was not unusual and convalescence was rapid. Dr. Oppenheim reported the lungs negative at all times, except for slight bronchitis, and the urine remained normal throughout.

Regarding the laryngeal condition: on the day following the tracheotomy, the patient's condition seeming to warrant it, a direct *laryngoscopy* of the larynx obtained. There was no membrane to be seen but there was a marked inflammation of the arytenoids and aryteno-epiglottic folds with swelling of both the false and true cords. The glottis was practically obliterated by this swelling, so much so that I could not pass the five millimeter bronchoscope into the trachea, but there was no ulceration of the mucous membranes. We were dealing, apparently, with an acute catarrhal laryngitis with sufficient swelling to obstruct the airway. Cultures taken from the larynx itself were negative for diphtheria but positive for the streptococcus. Lower bronchoscopy,

through the tracheotomy opening, revealed nothing more than an acute inflammation of the mucous membranes without swelling or edema.

The tube was removed and left out over night on the sixth day but breathing again became so labored that it was thought wise to reinsert it. After two days more she was able to get along without it very nicely and no further trouble was encountered. The progress of the laryngeal condition was watched and there was a gradual diminution of the swelling and inflammation, slight cough and hoarseness persisting for some four weeks after the tube was removed.

In conclusion, one cannot fail to be impressed with the thought that laryngeal stenosis may be the deciding factor in a case without being sufficient to cause actual asphyxiation, for the reason that obstruction may so exhaust the patient and embarrass the circulation that death will ensue; a termination which might well be avoided by reducing the respiratory effort and thus conserving the vitality of the patient to a considerable degree.

264 Metropolitan Building.

News Notes

Dr. Erlo Kennedy has been appointed Colorado representative of the United States public health service and in that capacity will co-operate with the state board of health in the control of venereal diseases.

Dr. Cyrus L. Pershing, now Major, writes from Base Hospital No. 29, London, England, that he is enjoying his work but does not much rejoice in the London climate.

Dr. W. L. Miller has changed location from Greeley to New Raymer.

Lieutenant Samuel Goldhammer of Denver is now stationed at Camp Dodge, Iowa, on duty with base hospital number twenty-six.

Lieutenant Robert L. Charles gives the following address for his **Colorado Medicine**: Base Hospital, Camp Lee, Petersburg, Va.

In a recent announcement, The Owl Drug Company of San Francisco states that beginning December 1, 1918, no preparations for the self-treatment of venereal diseases will be sold in the twenty-nine retail stores of the company, located on the Pacific coast and in the Middle West.

Death has claimed the following members of the Colorado profession within the past month: Dr. E. A. Whitmore of Leadville, died of pneumonia; Captain P. W. Carlson, of Denver, died of pneumonia at Kelly Field, Texas; Dr. Paul Miller of Boulder; Dr. W. D. Otis of Fort Morgan, died of cerebral hemorrhage. Dr. W. A. Miller of Denver, died of heart disease.

Captain Latta of Haxtun has been transferred from Fort Oglethorpe to the Rockefeller Institute and will be assigned from there to surgical service in the base hospital at Camp Devens.

Captain A. H. Peters of Colorado Springs is now in charge of a post hospital at Middletown, Pa.

Dr. T. F. Long, in a postcard apparently mailed from Halifax, N. S., states that he hopes soon to be in Denver again.

Major Whitridge Williams and Major Oliver Lyons of Denver, recently with base hospital number twenty-nine, have been detached and appointed consultants to the American forces in England.

The friends of Captain W. A. Sedwick, of the base hospital at Camp Grant, had the pleasure of seeing him in Denver in the early part of December. He was there on army duty and returned to Camp Grant December 10.

Captain W. C. Finnoff, writing from London, says that the influenza epidemic has been persistent there, but that there have been no restrictions on public gatherings.

Captain W. M. Anderson has been in Denver on furlough.

Dr. Jos. M. Shapiro of Denver is now an acting assistant surgeon in the U. S. Public Health Service and is connected with the bureau of venereal diseases of the state of Ohio.

Boulder News.

Drs. Spencer and La Rue will soon be established in their new quarters which will occupy one-half of the second floor of the Physicians' building.

Dr. E. Barbour Queal is at home after an operation for duodenal ulcer recently performed at Denver.

Dr. Martha Hayward, after a short stay in Boulder, has been called to the bedside of her mother, and Dr. Margaret Johnson, who recently returned to Boulder, is practicing in Dr. Hayward's place.

Drs. Gilbert, Robinson, LaRue, Fischer, Reed, Giffen, Queal, Campbell, Miles, Cattermole and Poley constituted a board of examiners for the students' army training corps, and Dr. Poley has been acting as medical officer and sanitary inspector for the corps.

Dr. John Andrew of Longmont is again enjoying his usual good health after an appendectomy performed at the Longmont hospital.

The death of Dr. Paul Miller is very keenly regretted by the members of the Boulder County Medical Society. He was universally liked by the profession.

Dr. W. J. Churchill of Longmont died of influenza shortly after his arrival from Pennsylvania. In the short period of his service there he had already demonstrated his ability in his chosen field.

The Boulder County Medical Society members will be dinner guests at the Boulder, Colorado, sanitarium, Wednesday evening, January 1, 1918.

New and Nonofficial Remedies.—During November the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion with New and Nonofficial Remedies:

National Pathological Laboratories: Rabies Vaccine (Harris).

Schering and Glatz: Creosote Carbonate, S. and G.; Guaiacol Carbonate, S. and G.

Book Reviews

The Doctor's Part; What Happens to the Wounded in War. By James Robb Church, A. M., M. D., Colonel Medical Corps, U. S. Army; with foreword by Major-General William C. Gorgas, Surgeon General, U. S. Army. Illustrated. D. Appleton and Company, New York, 1918. Price \$1.50 net.

This is a book which is true to its title. It conveys the intimate impressions of a military observer during two years of the European war. Colonel Church was ordered to France in 1915 as an observer for the United States government. After the entrance of this country into the war, he was placed on the staff of the Commanding General of the American Expeditionary Forces. The book is easily, almost colloquially written, and displays that power of ready sympathy with others without which any such volume would be lacking in color. The author has at the same time the ability to say things picturesquely or even epigrammatically. "A military observer is an authorized international village pest." "I lived in a befuddled atmosphere of a language in which I was constantly groping and never sure of my meanings." (He had taken quarters with a French family in Paris, none of whom had any acquaintance with English, and who undertook to instruct him in the vernacular.)

An interesting account is given of the general sanitary service of the French, which at the outbreak of the war was still in a condition of transition. "For instance, after the battle of the Marne in September, 1914, there was lacking transport by train, by horsedrawn vehicles, and most notably by automobile transport." We are told of the very strict course through which must pass the young Frenchman who decides to make military medicine his career. We learn of the wonderful achievements of the French railway system, later on in the war, in the transportation of large numbers of troops.

Other chapters describe the French hospitals of the interior, "the zone of the armies," the details of transportation, and the excitements of life in the front lines.

The book is full of graphic descriptions. In a review which is already lengthy enough, it must

suffice to quote the following as a sample: "It is a little difficult in the quiet walks of peace to realize just what can happen to a man's face as the result of shell wound and still leave him alive. . . . If you can figure to yourself what a man is with no nose, with no lower jaw, or only half a one, with a face that looks like a mangled beefsteak, you can appreciate what it means to patiently build him up again almost from the beginning and turn him out, scarred and seamed to be sure, but not an object that children would run from screaming. It is a work that calls for infinite patience, both on the part of the operator and the wounded man, for this is not done at one fell swoop, but means many weary months and sometimes as many as twenty or thirty operations. They borrow pieces of rib and bits of shinbone and make new noses of them; they twist and pull and coax adjacent tissue until it covers the gaps and they bridge in vacant areas by skin grafts until finally the unfortunate wretch comes forth somewhere in the shape that God made him."

United States Army X-Ray Manual. Authorized by the Surgeon-General of the Army. Prepared under the direction of the Division of Roentgenology. 506 pages, 219 illustrations. Published by Paul B. Hoeber, New York, 1918. Bound in flexible leatherette. Price, \$3.50 net.

Because the division of roentgenology of the army is headed by some of the most noted roentgenologists of America, the information contained in this complete little working manual may be relied upon as being the gist of the exact knowledge of today upon roentgenology. Although the book is prepared for military use, the requirements of military and civil practice do not differ sufficiently to detract from its usefulness to the civilian X-ray worker, and except for the prominence given to foreign body localization, it might have been written very much as it is for universal use. The following table of contents, with the added statement that exposure timings and positions are given, will show the book's scope:

1. Introduction.
2. X-Ray Physics—X-Rays and Electricity—Tubes and X-Ray Production—X-Ray Machines—Care of Apparatus—Induction Coils—Photographic and Dark Room Work.
3. Laboratory Experiments.
4. New Apparatus.
5. Standard Positions.
6. Dangers and Protection.
7. Fluoroscopy.
8. Localization.
9. Bones and Joints—Fractures—Bone Lesions.
10. Sinuses and Mastoids.
11. Teeth and Maxillae.
12. Thoracic Viscera—Chest—Heart.
13. Urinary Tract.
14. Gastro-Intestinal Tract.
15. Measurement of X-Ray Dose.
16. Cutaneous X-Ray Therapy.
17. Index.

As complete a treatment of the subject in a practical way has not before come to my notice in any single volume. F. B. S.

OFFICERS OF COLORADO STATE MEDICAL SOCIETY.

The list of officers of the Colorado State Medical Society for 1918-1919 will be found on advertising page X.

LIST OF CONSTITUENT SOCIETIES.

The list of constituent societies, with the secretaries' names and the dates of meetings will be found on advertising page V.

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No. 1

Editorial Comment

THE CARE OF THE CURABLE INSANE.

It is a fact known only to a small number of the general public that the state of Colorado makes at present no provision for the treatment and cure of the acute and curable insane. We are apt to think of insanity as a final and irrevocable tragedy in the life of the individual; but among alienists it is well known that a fairly considerable percentage of the insane are amenable to treatment in the early stages of their disease, although very few of them are restored to reason after a long period of insanity. Hence it follows that treatment in any such case, to be attended by the best results, ought to be given early and with a full understanding of the nature of the malady.

It is a reflection upon the modernity and philanthropy of our commonwealth that the friends of these unfortunates, the judges of the county courts who have to do with admissions, and the neurologists who are called upon to treat the patients are constantly and painfully faced with the realization that there is in Colorado no institution under state care where such patients can receive treatment which is likely to restore them to their normal place in the family and in the community. The fate of the great majority is to be committed to the state hospital, where they are incarcerated after the fashion of criminals, so that they may not harm the public, but where, among chronic patients and under the limitations established by state appropriations, none of the modern methods for their cure are or can be employed.

The state hospital for the insane is too

cramped and crowded to care for the physical needs of these mentally sick but often curable patients, who are not criminals and have committed no conscious offense against society, and who in the name of common humanity, to say nothing of the principles of social economy, should be given a chance for restoration to reason and to usefulness. Surely no man or woman with any of the milk of human kindness in his disposition would begrudge these patients the necessary care at the expense of the state.

The present condition of affairs is a disgrace to our boasted western civilization, and is surely tolerated only because the citizens of the state have not been informed on the subject. To insure a proper solution of the problem the greatest need is publicity. To meet this deplorable condition as several other states have done and yet others are now doing, there will be brought before the present session of the Senate and House of Representatives of the state of Colorado a bill providing for the establishment of a psychopathic hospital which shall be placed under the control of the Board of Regents of the state university and be a part of the university. It is proposed to make provision for a complete pathological laboratory where full analysis may be made of all conditions found to bear on the unfortunate state of mental abnormality; for the employment of a superintendent who shall have had a wide and definite experience in the care of this class of cases, who shall be a neuropsychiatrist of recognized ability, and who shall be placed at the head of the chair of neuropsychiatry in the teaching faculty of the university; for the proper selection of patients who offer hope of recovery, and for such cases as may tend to the prevention

of insanity. All this to the end that the state may meet its responsibility to a most unfortunate class of citizens; and that the curable insane may no longer constitute a permanent loss and burden to the social and economic fabric, or be doomed to hopeless insanity, as under the present régime.

This bill merits the hearty support of every citizen of the state. Such a pronouncement is doubly true at this time, when alienists generally predict that the number of insane, curable and incurable, will be vastly augmented from among the boys who are returning from the front. If we were apathetic on every other ground, a sense of loyalty to those who have fought our battles in Europe should be sufficient to guarantee for the mentally diseased the very best treatment that the state can afford. But, with or without an increase from this source in the number of the mentally afflicted, the need is imperative. The bill, which has been prepared as the result of conferences between judges of the county court and a committee appointed by the Colorado State Medical Society at its last annual meeting, should be passed without quibble. D. A. S.

INCOME AND HEALTH

Some one has said that the social problem is the health problem. If this is so, physicians as a class should be keenly interested in questions of social economy, and undoubtedly most physicians are so interested.

There was perhaps a time when medical and other scientists, overwhelmed by the wonderful importance of the new branch of knowledge established and popularized by such men as Pasteur, related disease too exclusively to the action of microorganisms. Today, in spite of the fact that our knowledge of bacteriology is steadily advancing, the tide is turning in the other direction, and we are realizing that questions of general hygiene, sanitation, conditions of work, and general physical well-being are in many if not most instances fully as fundamental as microbic etiology and specific therapy.

It is pointed out by Warren and Sydenstricker (American Journal of Public Health, vol. 8, p. 883) that the recent tendency is for public health workers to extend the scope of their activities to all preventable diseases and conditions which affect their prevalence; and that it is being more and more realized that the causative germ is only one of many factors in the spread of disease.

Several years ago, careful investigation of all the cases of disabling sickness among a population of four thousand people in seven cotton-mill villages in South Carolina showed that among persons of similar sex, age, and occupation, the sickness rate per thousand varied from 18.5 in the highest income class to 70.1 in the lowest income class. The financial condition in any given area of population has a very profound relation to the incidence of disease. In any large city the health rate is usually higher in the poorest sections. "Public health is purchasable," but it must be largely purchased by the individual. The possession of conditions favorable to health depends in large measure upon the individual's or family's ability to pay for them.

In all civilized countries there is an increasing tendency to recognize the principle of a "living wage." The Congress of the United States recently created a minimum wage board for the District of Columbia. The fact that a living wage is essential to a healthful standard of living has been basically accepted in the decisions of the National War Labor Board, on which both employees and employers are represented.

Years ago the writer was present in a medical class one of whose members asked Dr. Carroll E. Edson what could be done if it were found that a tuberculous patient was so poor that he could not take the rest or purchase the good food advised for him by his physician. The reply was brief and to the point: "You can cure tuberculosis, but you cannot cure poverty." It has lately been shown by Goldberger that an unbalanced diet causes pellagra, a disease which is more common among families with low incomes than among the more prosperous. A poor diet, of course, does not act as a direct

cause of tuberculosis; but at the same time there can be no question that undernutrition favors invasion by the tubercle bacillus.

Among several of the nations at war, but especially in Germany and Austria, inadequate supplies of proper food caused an enormous increase of infant mortality. Among the antiteutonic allies, the difficulties as regards food supplies were not so great, and yet in many areas the problems created by an insufficiency of nutrition became acute, being often accentuated by overwork. Even in the United States many members of the prosperous classes have felt some deleterious results from dietary restrictions which were partly compulsory, partly voluntary; and among certain sections of the "working class" population these difficulties were probably enhanced.

With very few exceptions, wages have reached levels enormously above those of three or four years ago; but it must not be forgotten that during the same period the cost of living has risen in even greater proportion. An estimate, made several years ago by Warren and Sydenstricker, of the cost of living during the period from 1907 to 1912, and based on the needs of the average family of five persons, father, mother and three dependent children, indicated that at that time such a family required an income in the neighborhood of eight hundred dollars per year. Of this amount forty-seven percent was allocated to food, seventeen percent to rent, sixteen percent to clothing, thirteen percent to sundries, five percent to fuel and light, and two percent to various forms of medical attention. A year ago, careful study by a committee appointed by the Bankers' Trust Company of New York City indicated that the increase in cost of living in the interval between 1914 and January, 1918, was between seventy-five and ninety-three percent. In the year which has elapsed since January, 1918, further material advances have been recorded.

If the sum of eight hundred dollars was barely sufficient to maintain an average

family under healthful conditions of living in the period 1907 to 1912, it seems probable that approximately double that sum is necessary under the existing scale of prices. Warren and Sydenstricker suggest that, since food is normally the largest item of expenditure among wage-earning households, families with lowered economic status are likely to skimp on food and become undernourished in order to live up to certain other standards regarded as necessary. Nursing mothers may be compelled to work, with resulting danger to themselves and their offspring. Children may be sent to work at an earlier age. And, just as lack of a sufficient supply of warm clothing was given as one of the causes of the high morbidity and mortality from respiratory diseases in the army during the winter of 1917-1918, so an increase of more than one hundred percent in the cost of clothing is likely to affect the problem of resistance to disease.

In spite of tremendous financial activity, of the accumulation of new and enormous fortunes, of great abundance of money in various forms, and of a general air of prosperity, the war has exerted a terrible and constantly increasing drain upon the strength and health of all the nations involved, as well as of a number of those which did not come directly within its scope. Since much of the working capacity of the world for years to come will be occupied in making good the depletion of resources, as well as the direct destruction, accomplished during the four and a quarter years of terrific struggle, the war's effects upon the health of the peoples are likely to endure much longer than the war itself; and all this is without reckoning the direct annihilation of many millions of useful lives, the making of millions of cripples, the debilitation of still other millions who endured months or years of trench life and nerve strain, and the certain dissemination of venereal disease by the returning armies among the civil populations. Must all this be repeated? Is the league of nations only a dream, or will mankind, as has happened before, at length achieve "the impossible"?

Original Articles

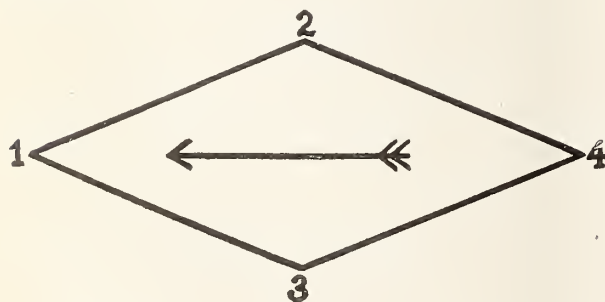
BLOOD TRANSFUSION.*

FROST C. BUCHTEL, M.D., DENVER.

The most important consideration in blood transfusion is the selection of a proper donor. The original work of Moss in 1910 should have made this statement unnecessary, but not infrequently one sees reports of blood transfusions where a donor of unknown group has been used. I have been asked within the last year, by a man who had given a transfusion or two, if it was not perfectly safe if one used a member of the patient's own family. Two articles have been published this year in our best surgical journals that have not considered a preliminary examination of the donor's blood a necessity.

Transfusion is never so urgently demanded that an unknown blood should be used. The donor should belong to the same blood group as the patient. If it is impossible to get such a donor, then one should be selected whose corpuscles are not agglutinated by the serum of the patient.

I offer this design as an easy way to remember what donor to use in case it is impossible to secure a donor of the same group.



Transfuse in the direction of the arrow. That is, a group 4 donor may be used to transfuse blood to a group 1, group 2, or group 3 patient; while a group 2 or group 3 donor may only be used for transfusion to a group 1 patient.

A group determination can be made in ten minutes in the majority of cases. One must have on hand a known group 2 serum and a known group 3 serum in order to

make a quick test. These sera are kept in sterile bottles in the ice box. They are also kept dried on cover slips in the ice box. To determine an unknown group a few drops of the unknown blood are suspended in one cubic centimeter of one and one half percent sodium citrate in nine tenths percent salt solution. A platinum loopful of this solution is placed on a cover slip with two loopfuls of the known 2 serum and after shaking a little is examined as a hanging drop with the microscope. A loopful of the unknown blood suspension is also in like manner examined with a group 3 serum. A glance at the little table appended shows the correct classification of the unknown blood.

		Cells			
Serum		1	2	3	4
	1	0	0	0	0
	2	+	0	+	0
	3	+	+	0	0
	4	+	+	+	0

The crosses indicate agglutination; the ciphers, no agglutination.

A mistake in this test is such a serious error that we always use several known sera with the patient's cells and also ordinarily test certain known cells with the patient's serum. If all our tests agree we feel sure of our diagnosis of the group of the unknown blood. While the ordinary blood group can be determined in a short time, we occasionally have a blood to group that requires several hours' work before we are quite satisfied as to its classification. This is made necessary apparently by the fact that some bloods have very weak agglutinins and some have no agglutinins. The group determination of blood is not complicated but it requires very painstaking laboratory work and an enormous amount of patience.

For the person who does only an occasional transfusion and who has on hand no known sera, the determination of the group can be evaded and yet a proper test be made by testing the cells of the recipient with the serum of the donor and the donor's cells with the recipient's serum. If there is no agglutination in either test the two bloods belong to the same group. If there is no agglutination of the donor's cells by the recipient's serum it is safe to proceed with the

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

transfusion even though the recipient's cells are agglutinated by the donor's serum.

The selection of a suitable donor, one of the right group and one free from any transmissible disease, is so important that it can not be overemphasized, and if it is disregarded the terrible anaphylactoid reactions and occasional deaths will soon condemn the whole procedure to the medical graveyard. There are two great methods of transfusion, the direct and the indirect. The direct method has been almost entirely abandoned and for very good reasons; the danger of infection to the donor, destruction of the donor's vessel and inability to accurately estimate the amount of blood transfused.

There are many ways to give an indirect transfusion. No method is entirely free from objections. If all methods but one had to be abandoned the citrate method should be the one retained. It is the easiest to learn and can be used by the doctor who gives only an occasional transfusion. The one great objection is that about two out of three patients have a chill following the transfusion. The chill is of citrate origin and so far no way is known to prevent it.

Some of the patients have a terribly severe chill and complain of it bitterly and dread another transfusion. I have seen patients have a chill one week and fail to have it the next week when the same amount of blood from the same donor was administered. There is no way to tell whether or not the patient will have a chill. I have never heard of a fatality that could be ascribed to the chill. When a citrated blood transfusion was immediately followed by a surgical operation under general anesthesia I have never observed a reaction. It is the method of choice in private homes, for acute hemorrhages, for transfusion into the superior longitudinal sinus in babies and for the occasional operator.

It is such a comfort to be able to transfuse any amount of blood without reaction that the expert with a good operating room and a team of well trained assistants is very apt to choose some method in which whole untreated blood is used. Paraffined tubes of various kinds work beautifully and are the most spectacular of all methods. It requires

considerable time to prepare the tubes, which is more or less of a nuisance. It takes me, with the help of one assistant, almost four hours to wash, sterilize and coat twelve Beth Vincent tubes and needles. I never feel safe in using a tube that has been sterilized more than a month. The second objection to any paraffined tube method is that one will occasionally lose a tube of blood through his own or an assistant's awkwardness.

The syringe method as devised by Lindemann is a satisfactory method and is the method, as modified by myself, which I prefer when the patient is in St. Luke's hospital and where very great haste is not demanded. All methods are said to have the same therapeutic result. It is difficult to say whether this statement is correct. Some donors help pernicious anemia cases more than other donors. When a pernicious anemia case is not reacting favorably to the transfusions as determined by the blood examinations, I regularly change the method of transfusion. Some patients apparently need to be jolted out of their rut by a severe chill as gotten by the citrate method. Other patients appear to do better with a method that gives them no reaction.

An analysis of the last one hundred blood transfusions I have given shows the following results:

- 46 were given for pernicious anemia.
- 16 for bleeders (purpura hemorrhagica and hemophilia).
- 14 for acute hemorrhages.
- 12 for secondary anemia.
- 11 to prepare patients for operation (nine of this list are also included in other groups).
- 7 for sepsis.
- 1 for shock.
- 1 for malnutrition.
- 1 for Hodgkins' disease.

109

9 counted twice.

100

Transfusions in pernicious anemia are indicated. Most of the patients are given a remission and their lives are prolonged. We

can tell with considerable accuracy by the white cell count which cases will improve quickly. The cases with a low white cell count and especially those with a low polymorphonuclear count and rather high lymphocyte percentage, indicating exhaustion of the blood forming organs, are the patients that receive the least benefit from the transfusions. We have recently done a little more for this type of case by giving large transfusions with the syringe method, getting all the blood we can from two donors. If one can increase the total volume of circulating blood there are fewer symptoms, even though the blood count and hemoglobin estimation are not high. Large quantities of milk by mouth and massive transfusions are apparently giving us slightly better results than we formerly had with smaller transfusions.

The sixteen transfusions for bleeders were given as follows:

- 8 for purpura hemorrhagica.
- 5 for acquired hemophilia.
- 3 for hemorrhage of the new-born.

The cases that have most interested me are the ones classed here as bleeders. All these patients were saved and all would have died without transfusion. The theory we have been working on in purpura hemorrhagica is that it is an infection with an elective affinity for the blood platelets. We have, therefore, supplied blood platelets by transfusion and have removed the tonsils, which appeared to be the focus of infection in the cases treated. Cases with bleeding from the nose, throat, gums, lips, uterus, kidneys, and with great subcutaneous ecchymoses and purpuric spots and with a blood platelet count as low as 3000 have been restored to health. The results are so brilliant that we feel that this disease will soon be removed from the list of incurable affections.

The cases of hemophilia have all been of the acquired variety and the bleeding has been checked by one transfusion. Three transfusions for hemorrhage of the new-born are included in this group. Transfusion can be depended upon to cure this disease in a very high percentage of cases.

The acute hemorrhage cases give brilliant

results. The transfusions under this heading were given for the following conditions:

- 3 for gastric hemorrhage.
- 3 for postoperative bleeding (two of these cases happened to be doctors' wives).
- 1 for hemorrhage in typhoid fever.
- 2 for placenta previa.
- 1 for premature separation of the placenta.
- 1 for postpartum hemorrhage.
- 1 for ruptured ectopic gestation.
- 1 for hemorrhage from papilloma of the bladder.

Of these fourteen transfusions for acute hemorrhage there were three deaths. The two placenta previa cases died of sepsis; both were county hospital cases. One was delivered by version and one by cesarian section. Both were packed before admission to the hospital, under adverse conditions in poor homes without any conveniences, as reported by the two physicians who attended the patients before sending them to the hospital. Neither of the patients died from hemorrhage, but from sepsis many days later. The hemorrhages in the typhoid case ceased after one transfusion. The patient died two weeks later from his disease.

The twelve secondary anemia cases were:

- 4 for unknown anemias.
- 4 for cancer of the stomach.
- 2 for Von Jaksch's disease.
- 2 for Addison's disease.

There were eleven transfusions to prepare patients for operation.

- 1 for hemorrhage from papilloma of the bladder.
- 1 for gastric hemorrhage.
- 1 in placenta previa.
- 1 for hemorrhage from the kidney.
- 2 before tonsillectomy in purpura hemorrhagica.
- 2 in cancer of the stomach.
- 1 for ectopic pregnancy.
- 1 fibroid case.
- 1 jaundiced case.

There is a great field for transfusion in preparing patients for operation. Seven of the eleven patients in this group could not have been operated upon at all without the

transfusion. All the patients stood their operations well. Four cancer patients in the group have since died. The others are alive and well.

The sepsis cases were:

3 for septicemia.

2 for chronic sepsis following pus tube operations.

1 for sepsis following hemorrhage after trachelorrhaphy and perineorrhaphy.

1 for septic jaundice.

The septicaemia cases all died and were not even improved by the transfusion. The other cases were saved and the deciding factor in their recovery was apparently the transfusion. The septic jaundice case was interesting. The woman had a toxemia of pregnancy for which a cesarian section was done. Soon after the operation she began to bleed from the incision, from the nose, mouth, gums, lips, and under the skin. She became deeply jaundiced. She vomited constantly. She was a pathetic sight with her thick hemorrhagic lips oozing blood. She had a septic temperature and her pulse was of very poor quality and rapid. I was asked to see this patient on the fifth day after her cesarian section. One transfusion stopped the bleeding immediately and her recovery thereafter was progressive. The infection was undoubtedly due to a hemolytic streptococcus.

The one patient transfused for shock died. The transfusion did no good. Shock associated with hemorrhage or due to hemorrhage is relieved by a blood transfusion, but where the condition is pure shock transfusion is not indicated.

The malnutrition case was a difficult feeding patient in the children's hospital. The transfusion gave the child an assimilated square meal. The Hodgkins' case had been transfused a number of times at the Mayo clinic. He stopped off in Denver just to be transfused to enable him to get to his home in Idaho.

In conclusion I desire to acknowledge the painstaking work done by my associate, Dr. Lucy Passover. In the last few years she has made thousands of blood examinations of patients and donors. This work is so time consuming that I should have been

unable to do it without her valuable assistance. I also want to express my admiration of our donors, mostly students in Denver University and in the medical school of the University of Colorado and many of the St. Luke's hospital nurses, who have always been ready and anxious to serve.

550 Metropolitan Building.

DISCUSSION.

Thomas E. Carmody, Denver: I think it is a very good thing that we have some one who can devote so much time to this subject as Dr. Buchtel has done and can do the work so well as he can.

I have seen two of these cases, one of which I referred to him. The case I referred to him was a very interesting one. I was called by a general practitioner, in the first place, because of a nasal hemorrhage which apparently at that time was all there was, but on examination of the patient we found there was bleeding from the mouth and gums, and later from the bowels and uterus. Transfusions stopped the bleeding for, I think, three days the first time, then Dr. Buchtel gave her some blood intramuscularly and it stopped it for some time. We found it necessary to curette the uterus and to remove the tonsils. We removed the tonsils and curetted the uterus at the same time, doing a transfusion immediately before, and the patient made an uninterrupted recovery. There is no question but that we had to deal with the streptococcus hemolyticus in this case as the exciting cause. We had bleeding also from the tonsils at the time as well as from the gums, palate, and so on. The probability is that the infection in the tonsils was overlooked and nasal bleeding seemed to be the trouble primarily.

So far as the other cases are concerned, I know nothing about them except what I heard from others. I heard of cases of pernicious anemia and a number of others where the patients were transfused for operation, and I understand the results were very good in many cases.

I think Dr. Buchtel is to be congratulated on the fact that he has been able to save a number of these cases which no doubt would have died without the transfusion.

I remember a case I had a number of years ago, a doctor's son. That boy would undoubtedly have been saved from a purpura hemorrhagica if he had been transfused in the same way.

A. R. Pollock, Monte Vista: I should like to relate a case which bears out the benefits of transfusion. A man was kicked by a horse in the epigastrium last fall, and at two o'clock in the afternoon he was in shock and his radial pulse could scarcely be felt. We kept him until eight o'clock in the evening and we thought he had internal hemorrhage. We were rather afraid to operate on him in that condition. We gave him blood transfusion by the citrate method. We found a rupture of the liver and sewed it up by mattress sutures, and the man recovered.

We had another case in which we resorted to transfusion. It was a case of pernicious anemia treated by a Denver man for quite a while by injections of iron and other agents. My partner, Dr. Trueblood, gave seven transfusions, and to all appearances the patient is well. Her blood count is good. She had swelling of the ankles at

the time the transfusion was begun. We feel it is a good thing to have ready the citrate solution and use it in case of emergency. We have also some donors we keep on hand, and we feel it is a great addition to the resources of the hospital to be prepared to do blood transfusion. I have heard of Dr. Buchtel's transfusion work and he is doing a great many transfusions. A man like Dr. Buchtel in a city is valuable and we can see the value of proceeding with operation in certain cases that have been transfused.

Dr. Buchtel (closing): One point I desire to make is that no transfusion should be done without knowing what group the donor belongs to. There have been a certain number of papers written that would rather lead one to feel that this is not an absolute essential.

There is a paper by Dr. Bruce Robertson in the *Annals of Surgery* for January, 1918, in which he reports thirty-six transfusions with two cases of hemolysis. In his last paper, which appeared in the *Lancet*, June 1, 1918, he reports all of the cases that he has done, namely, sixty-eight. Of these sixty-eight cases, thirty-six were successful and the patients were discharged to the base hospital in a few days. Fifteen of the cases died. The transfusion was immediately helpful, but the patients later died. Eight of them died from shock, five from gas gangrene, one from capillary bronchitis, and one from pulmonary embolism. No benefit at all was gained from the transfusion in four cases. These were cases associated with shock which was more of a feature than hemorrhage. Transfusion was harmful in two of the sixty-eight cases. Death took place from hemolysis. Those were the primary hemorrhage cases. Of the secondary hemorrhage cases, there were nine, and of these six recovered and three died. Of the three that died, one died from hemolysis, one from gas gangrene, and one from streptococcus septicemia one month later. There were two cases of severe monoxide poisoning. This list I have given you is taken from the paper published in the *Annals of Surgery* by Colonel Primrose.

Dr. Primrose in 1916 reported two cases of transfusion in Saloniki for acute hemorrhage; one died from hemolysis, a percentage of fifty. In the cases of L. Bruce Robertson given in the *London Lancet* of June 1, this year, three of the sixty-eight cases died from hemolysis, a mortality of four and a half per cent.

At the last Interallied Surgical Congress, held March, 1918, the subject of transfusion was considered by Professor Tuffier, of Paris. The conclusions, after full discussion, were as follows: The results obtained by the transfusion of blood justify its being looked upon as a method of choice in the treatment of severe hemorrhage, both primary and secondary. It was agreed that the method of transfusion employed should make it possible to measure the quantity of blood transfused. Regarding the danger of hemolysis, it was concluded that at advanced posts or dressing stations it is justifiable to resort to transfusion, even though it is impossible to test the agglutination, as the risk is small, but it should be tested in all units. The statistics as given by L. Bruce Robertson and Dr. Alexander Primrose show this is not a small risk, fifty per cent in one case, and four and a half per cent in the other cases with a large series, and some of these bloods were tested in the series of sixty-eight cases. When one realizes the importance of doing transfusion in an emergency by having on hand certain known donors belonging to group 4, he knows the transfusion can be made with safety.

It seems to me to be the part of wisdom for one even at advanced dressing stations to have a certain list of known donors who may be called upon for these emergency cases. One is apt to have certain cases of acute hemorrhage come in, and it is just as essential to have known donors to be used as it is to have the instruments at hand already sterilized and ready to catch bleeding arteries.

TUBERCULOSIS IN INFANCY AND CHILDHOOD.*

EMANUEL FRIEDMAN, M.D., DENVER.

Frequency. Römer, Hamburger¹, Behring,² and others, have established beyond dispute that tuberculosis finds its inception in childhood and that the infection, in the vast majority of instances, remains localized and latent throughout life. In a small minority the process becomes active within a variable period after invasion. Knopf³ ascertained from American sources that tuberculosis is most likely to assume activity beyond the age of eighteen. Not a few place the figure as low as three to ten years.

The prevalence of childhood infection is in a measure dependent upon the frequency of adult tuberculosis in a given locality and in no small degree on economic, social and intellectual forces in operation. Burkhardt⁴, in fourteen hundred sections, failed to find a single instance of tuberculosis in the new-born; found twenty-eight percent affected under five years, and from there on a steady increase in frequency to the age of fourteen years, when eighty-seven percent were found harboring tuberculous lesions. Albrecht⁵, in three thousand two hundred and thirteen autopsies, found fourteen and six-tenths percent tuberculous under one year, forty-four percent between two and six years, and fifty percent between six and twelve years. Beitzke⁶, at the Bern Pathologic Institute, studying three hundred and ninety-seven children under fifteen years, obtained the following figures: new-born, none; first year, ten percent; one to five years, forty-one per cent; and during school age, sixty-five percent. The necropsy findings in children under fifteen years, based on enormous material by Harbitz, Baginsky, Babes, Muller, Hecker, Councilman and Still, show tu-

*Read before the Denver Tuberculosis Study Club, January, 1917.

berculosis to have existed in sixteen to forty-two percent of the cases. Naegeli of Zurich in five hundred autopsies on children under fifteen years finds the astoundingly high percentage of ninety-seven with tuberculous lesions. Bartlett⁵, in one thousand one hundred and thirty-one autopsies at the New York Babies' Hospital, found an incidence of sixteen and four-tenths percent of tuberculosis-positive cases.

The application of the tuberculin tests gives, as might be expected, a higher percentage of positive findings; for thereby a lesion, which might readily escape the pathologist because of its inaccessibility or microscopic size, will be revealed. In this connection I wish to quote Paul Wollmer¹, who finds a close parallelism between autopsy findings and results obtained by the Von Pirquet test, and Veeder and Johnson⁶, who regard the cutaneous test as only about ten percent less accurate than the subcutaneous. Based on these tests, Hamburger¹ finds one percent tuberculous during the first year of life; second year, ten per cent; third and fourth years, twenty-five percent; fifth and sixth years, fifty percent; seventh to tenth years, seventy-five percent; and eleventh to fourteenth years, ninety-five percent. Müller of Berlin reports fifty-six percent reacting positively at puberty; Moro, sixty percent; Nothman, eighty-four and a half percent; Mantoux of Paris, eighty-five percent; Calmette at Lille, ninety-four percent; and Von Pirquet, ninety percent. Hess³, in New York children, has obtained five percent positive under one year, thirty-three percent one to two years, seventy-five percent two to five years. Veeder and Johnson's results in several hundred cases are as follows: under one year, eleven percent; one to two years, twenty-four percent; two to four years, thirty percent; four to six years, thirty-three percent; six to eight years, forty percent; eight to ten years, forty-four percent; ten to twelve years, forty percent; and twelve to fourteen years, forty-eight percent. Excluding the clinically tuberculous, their figures range from one and one-half percent under one year to thirty-eight percent at twelve to fourteen years. Wachenheim, in children from the

New York tenement district, found only five reacting positively in eighty non-tuberculous. Shaw and Laird, in three hundred and thirty institutional children between six and fourteen years old, found forty-five percent positive. Cattermole⁷, in sixty-six Colorado-born children under fourteen, found twenty-five percent positive. Fishberg of New York, in children from the congested tenement quarters, obtained sixty-seven percent positive in those associated with the tuberculous and fifty-three percent positive in the cases not so exposed.

It is universally conceded that tuberculosis is an acquired and not a hereditary affection, and Gaertner³ of Jena has proved experimentally the impossibility of paternal transmission of tuberculosis. On the other hand, Von Baumgarten⁸ contends that tuberculosis is a spermal infection. The rarity of congenital tuberculosis fails to substantiate the truth of such an hypothesis. According to Von Pirquet, placentogenous infection, which Schmorl⁹ declares to be the usual channel of infection in the fetus, is rare; only twenty authentic cases having been placed on record. In most congenital cases, infection, according to Leunenberg¹⁰, supervenes during birth, the mother suffering from advanced tuberculosis. Grulee and Harm¹¹ say that infection may occur from aspiration of infected vaginal secretion or amniotic fluid during the expulsive stage, and believe the condition to be a more frequent one than is generally accepted as the case.

Portal of Entry and Primary Lesion. The majority of observers agree that in approximately ninety-five percent of the cases of tuberculosis the respiratory route constitutes the portal of entry, and the lungs the seat of the primary lesion. Ghon, on the basis of an enormously large and painstaking autopsy record, concludes that the aerogenous route is overwhelmingly the most frequent path of invasion. V. Hauseman¹², in about ten thousand cases, found primary intestinal tuberculosis only twenty-five times, and Virchow not oftener than three or four times a year. Hamburger⁴ in eight hundred and forty-eight autopsies in children had never met a primary infection of the mesenteric glands, and Albrecht only in sixty-six hundredths percent of his cases. Bartlett⁵,

in one hundred and seventy-eight autopsies, found the oldest lesion one hundred and thirty-five times in the respiratory tract and fifteen times in the mesenteric nodes. On the other hand, almost equally convincing facts are adduced in support of the view that routes of infection other than the pulmonary are by no means infrequent. Von Behring⁴ advances the theory that the intestinal tract constitutes the most frequent site of primary tuberculous infection, brought about by ingestion of infected milk. Ravenal¹³ deprecates the tendency to assume that the most advanced lesion in the body is necessarily the primary focus. By feeding experiments, he produced fatal pulmonary tuberculosis in animals, causing an insignificant intestinal lesion, whereas the apparently oldest was found in the lungs and bronchi. It has been conclusively proved by Deist⁴, Behring and Römer¹³ that an intact mucous membrane may permit the passage of bacteria without a demonstrable lesion resulting at the point of entry. Wagner¹² found in seven hundred and fourteen children one hundred and forty tuberculous ones, and fifty-three of these showed the primary lesion in the intestines. Billings³ is also an advocate of the idea of the digestive tract being a frequent portal of entry. Albrecht¹³, in one hundred and six cases, found the tonsils the primary seat of tuberculosis three times. Wood¹³, in one thousand six hundred and seventy-one collected cases, found the tonsils primarily affected in five and two-tenths percent. Dieulafoy in feeding experiments caused a tonsillar primary lesion fifteen times in ninety-six cases. Grober¹³ believes apical tuberculosis most frequently originates through the tonsils; and Ravenal¹³ likewise shares the belief that the tonsil plays no insubordinate role as a portal of ingress for the tubercle bacillus. Holt¹⁴ has collected forty-two cases of tuberculous infection originating during the rite of circumcision, with sixteen deaths. Chancellor reports a primary lesion of the cheek following a bite by a tuberculous mother.

Type of Tubercle Bacillus. It is not universally admitted, in spite of Theobald Smith's¹⁵ demonstrations, that the two varieties of tubercle bacilli can be differen-

tiated with certainty. Behring, Römer, de Jong, and Rabinowitch⁴ are disposed to look upon the two types as identical. Von Behring¹⁵ and V. Eber¹⁵ believe that the bovine type is capable of undergoing, during prolonged residence in the human body, a transmutation into the human form. Spengler⁴ is of the opinion that in sixty percent of infections both types can be isolated. Most observers believe in a definite preponderance of infection due to the human type over that due to the bovine, but this is less pronounced in childhood than in adult life. Kossel⁴, in fourteen hundred autopsies on tuberculous subjects, found only one hundred and twenty-eight cases due to the bovine bacillus, thirty-five of these being mesenteric gland, forty-seven cervical gland, thirty-three general and only a negligible number bone and meningitic tuberculosis. The English Commission in 1911 found nineteen cases of bovine tuberculosis in one hundred and eight studied, distributed as follows: two pulmonary, fourteen abdominal, and three cervical. Park and Krumwiede¹⁵ of the New York Research Laboratory reported in 1912 on a total of one thousand five hundred and eleven cases reviewed by them. They found seventy-six bovine out of a total of two hundred and ninety-two cases in children under five years, and forty-six out of one hundred and thirty-one in children between five and sixteen years old; in adults, only fifteen in nine hundred and forty cases. Of sixty-eight bone and joint tuberculosis cases, only three were of bovine origin; and of forty-nine lung infections, only one was due to this type. They observed that the bovine bacillus displays a selective affinity for cervical glands, abdominal organs and glands, meninges and skin. Dieterlen⁴ makes the astounding remark that he has not encountered a single instance of pulmonary tuberculosis of bovine origin, and Medin¹⁵, in thirty years' work at the Stockholm Hospital, did not encounter a single tuberculous infection which he could unhesitatingly attribute to the bovine variety of the tubercle bacillus. Deist⁴ and Orth¹⁵ approximate most closely to the actual facts in stating that about ten percent of all infections

as determined at autopsy on children are of bovine origin; Rosenau¹⁵ and Delepine¹⁶ think from twenty-five to thirty-three percent is correct. Von Behring¹⁵, Mitchell¹⁶ and Fraser, on the contrary, believe that infections referable to bovine bacilli are quite common. Indeed, Von Behring claims that all adult tuberculosis originates in a bovine infection sustained during childhood, the organisms undergoing a change to the human type during the long period of latency. Fraser¹⁸, in sixty-seven cases of bone and joint tuberculosis in children under twelve years of age, found forty-one due to the bovine variety, twenty-six to the human, and three with both types present. Mitchell¹⁶ of Edinburgh investigated eighty consecutive cases of tuberculosis in children under twelve years of age and found seventy-one bovine and nine human in type. The largest number were under two years and had been fed raw milk.

Pathology. The primary focus, according to Albrecht, may be found in any portion of the lung. Ghon and Römer¹⁷ claim that even in the first month of life the adult type of pulmonary tuberculosis may prevail. Lebküchner¹⁸ in one hundred and fifteen cases, forty of whom were under the age of one year, found the most advanced lesion at the apex. Healing is only exceptionally encountered during childhood. Cavitation is fairly common. Ribadeau and Dumas¹⁹ in sixty-eight autopsies found cavities twenty-two times, these frequently attaining the size of a hazelnut. Caseation of glands is far more frequent than in adults. E. Rist²⁰ points out that the glandular involvement almost without exception overshadows the pulmonary lesion, which not infrequently is so inconspicuous as to entirely escape detection. Ghon's careful autopsy findings on one hundred and eighty-four tuberculous children are of sufficient interest to merit extended quotation. In ninety-two and four-tenths percent the primary focus was pulmonary; one hundred and twenty-three had a single focus and the remainder two or more foci; fifty-one showed cavities; thirty-four, calcification; in five the diseased process was confined to the lungs. In only one case did the pathologist fail to find a

pulmonary lesion to correspond with the bronchial gland infection. The focus in the bronchial gland was found invariably of more recent formation than that in the lung. In fifteen instances, lesions apparently older than those found in the lungs were encountered; in fourteen, no pulmonary lesion was discovered. Not a single case of congenital tuberculosis was met with. Tonsils were found to be the seat of primary tuberculosis once, small bowel three times, and skin once. Healing was not observed under the age of one year. Pleural changes were found one hundred and fourteen times. When a single pulmonary lesion was found, it was located in sixty-one percent on the right side and in thirty-nine percent on the left. The right upper lobe was found involved most frequently, then the left upper, then both lower, and lastly the middle. Of two hundred lung lesions, four percent were subpleural, nineteen percent apical, four and one-half percent immediately below the apex, and six percent basal and interlobar in location.

Distribution. During child-life, the glands, lungs and meninges are the sites of predilection of the tubercle bacillus. The younger the child, the more likely a generalized tuberculosis. Weber⁴, in one hundred and five autopsies in children under fifteen years of age, found sixty cases of abdominal tuberculosis, twenty-five of cervical, seven of general, three of bone and joint, six of skin and four of tonsillar. Baldwin⁸ finds the lungs invaded in fifty percent of childhood tuberculosis, the glands ranking next in frequency. Of the glandular involvements, Cruikshank²¹ finds the tracheo-bronchial group most often diseased, then the mesenteric, and lastly the cervical. Krumwiede and Park²² in two hundred and ninety-two cases of tuberculosis in children under five years of age found thirty-six pulmonary, thirty-nine cervical, thirty-six axillary and inguinal, twenty-four abdominal, seventy-seven general (including meninges), thirty-two meningeal, twenty-seven bone and joint, two skin, and none tonsillar or of genitourinary tract; in one hundred and thirty-one children from five to sixteen years old, fourteen pulmonary, fifty-eight cervical,

four axillary and inguinal, seventeen abdominal, eleven generalized (inclusive of meningitis), three meningeal, forty-four bone and joint, two genito-urinary, ten skin, and one tonsillar. Bartell and Wollstein²³ in one hundred and seventy-eight autopsies on children under five years of age found a striking tendency to generalization; in no instance was the process limited to the lungs. In five the disease was limited to bronchial nodes and in two to lungs and bronchial nodes. In fourteen no pulmonary lesion was discoverable. Calcification was noted only five times in the lungs and thirteen times in nodes. In sixty-nine tuberculous meningitis was present, practically two-thirds of all under the age of two years showing this complication.

Symptoms and Diagnosis. Tuberculosis, particularly when limited to a gland, is capable, according to Baumgarten⁸, of an indefinite period of latency. Turban²⁴ states that the tuberculous process may proceed to an advanced stage before its existence is betrayed, and Straub²⁵ contends that the primary lesion may cause no symptoms, the condition becoming manifest after involvement of glands has taken place. All are agreed that tuberculosis in infancy and childhood is often extremely difficult of diagnosis. The symptoms will depend in a degree upon the location and the degree of activity of the tuberculous process. Certain symptoms due to the liberation and absorption of the specific toxin characterize all active forms of the disease. The most important of these are stationary or declining weight, impaired appetite, lassitude, pallor, digestive disturbances and, most suggestive of all, fever. This is usually remittent in type, of moderate elevation, and in evidence in the afternoon. Hamburger²⁶ believes that a difference of one degree C. between the morning and evening temperatures, irrespective of the height reached, is significant of a tuberculous infection. Reuben²⁷ is of the opinion that many an unexplained fever or one of the type commonly attributed to influenza, digestive disorders, and other vaguely defined conditions is in reality of a tuberculous nature. He believes fever is the most constant and suggestive symptom

of tuberculosis in infancy, and may be high, not infrequently reaching one hundred and four degrees F.; or may be of a low continuous type with occasional exacerbations, and last for many weeks. Ranke thinks that a temperature showing wide fluctuation should direct attention to the possibility of a tuberculous focus.

Congenital tuberculosis is characterized by underdevelopment, wasting, fever, meteorism, enlargement of the spleen and liver and frequently the presence of tuberculides. Generalized tuberculosis during early stages is indistinguishable from septicemia or typhoid. If the lung symptoms predominate, the affection is apt to be diagnosed as an ordinary broncho-pneumonia. Its true nature can, usually, be ascertained only at autopsy.

Tracheo-bronchial gland and pulmonary tuberculosis frequently coexist. In addition to the constitutional symptoms, a peculiar metallic non-productive cough, not unlike that associated with pertussis, is perhaps the most significant symptom of adenopathy. We frequently encounter paroxysmal attacks of dyspnea, expiratory at first, and later inspiratory as well. Expectoration is rare, and hemoptysis likewise exceedingly uncommon, though Rolleston and Ross¹⁹ report a fatal pulmonary hemorrhage in a child of four years. Interseapular pain radiating to shoulders may be complained of.

Goodman²⁵ calls attention to instances of rupture of a caseous gland into a bronchus. This accident gives rise to alarming dyspnea and if unrelieved may cause death or broncho-pneumonia. The condition may be readily diagnosed by tracheo-bronchoscopy, and timely intervention be followed by recovery. Inspection of the chest frequently reveals dilated veins in tracheo-bronchial gland tuberculosis. Pressure over the sterno-clavicular junction and over mid-thoracic vertebrae may elicit pain. D. B. Lees²⁸ has found that a careful physical examination of the chest, with absolute relaxation of the muscles, will enable one to diagnose with marked accuracy chronic pulmonary tuberculosis in childhood. He considers as pathognomonic certain small areas

of dullness revealed by very light percussion; these areas, constant in location and roughly symmetrical, are found in the vicinity of the first dorsal spines, at the inner aspects of the spines of the scapulae, and anteriorly at the second rib near the sternal border. Von Pee¹⁰ advocates the ortho-percussion of Goldscheider as exceedingly helpful. Ranke points to the exaggeration of the normal dullness at the level of the spines of the scapulae, obtained by percussing the interscapular regions from below upward, as indicating tuberculosis of the tracheo-bronchial glands; this difference is somewhat more pronounced on the right side. On auscultation, any deviation from the normal, provided it is constant, should arouse suspicion. Grancher and Bezançon²⁹ interpret decreased respiratory murmur as being due to enlarged glands. Housquains²⁹ speaks of harsh inspiration, if constant, as the most significant sign of early tuberculosis; and next in importance, a weak inspiratory murmur and, lastly, inspiration of a jerky character. D'Espin's sign is pathognomonic of enlarged tracheo-bronchial or bronchial glands but does not indicate the nature of the enlargement. Hamburger admonishes us against a hastily diagnosis of tuberculosis. He points out that a cough persisting even for weeks may be of nervous origin and amenable to suggestive treatment.

Miliary tuberculosis of the lungs can only be diagnosed, as a rule, at autopsy, and according to Northrup³⁰ by the x-rays.

If the pathologic process in the lungs has advanced beyond the stage of incipency, especially in older children, it will reveal itself by the same physical signs as obtain in adult tuberculosis.

Bass and Wessler³¹ direct attention to "recurrent hilus infiltration" and consider the condition a clinical entity. It is due to the extension of the tuberculous process from a diseased hilus gland into the lung parenchyma. In the majority of cases, the condition is found on the right side between the upper and middle lobes, is triangular in shape, with the base at the hilus, apex extending toward but not quite to the lung periphery, and the lower border is formed

by the inter-lobar fissure. The condition admits of complete retrogression.

Among the most important localizing signs and symptoms of tuberculosis of the intestines, mesenteric glands and peritoneum, are abdominal distension, constipation alternating with diarrhea, intermittent colic, and digestive disorders.

Tuberculosis of the skin, barring the primary lesion, is almost invariably a terminal event in a generalized tuberculosis.

The symptoms and signs of tuberculous meningitis are too well known to require more than passing comment. Meyer³², in an analysis of one hundred and five cases from the Boston Children's Hospital, found eighty percent occurring in children between one and one-half and five years of age, and in almost 50 percent measles and pertussis had preceded the disease, while in twenty-five percent a direct exposure to tuberculosis was ascertained. In seventy-one percent the eyes presented some abnormality at some stage, knee jerks were absent in twenty-one percent, Babinsky reflex positive in twenty-one percent, Kernig's sign present in twenty-seven percent, and paralysis in forty-three percent, the most common form being ocular; rigidity of the neck had been found in seventy percent and retraction in only nineteen percent. In over eighty-five percent, vomiting was an initial symptom. Terminal bronchopneumonia was present in sixty-one percent.

Cervical gland tuberculosis is frequent, but we must refrain from interpreting every enlargement as of tuberculous origin; for every oral infection leads to glandular hypertrophy. Constitutional symptoms are usually absent. Enlargement of supra-clavicular glands is looked upon as extremely suggestive of tuberculosis. Ranke³³ lays diagnostic emphasis on the tuberculous gland, in its retrogressive stage, becoming hard and fixed and losing its former rounded contour.

The x-ray is an important diagnostic adjunct, particularly in bone and joint tuberculosis, tracheo-bronchial gland affections and recurrent hilus disease. Dodd¹⁹ sounds a note of warning against judging every lesion revealed by x-ray to be tuberculous

and Hawes¹⁹ correctly advises that it is merely supplemental to other well established diagnostic methods. The stereoscopic views should be given preference over the single flat plate whenever feasible.

The various tuberculin tests constitute indispensable diagnostic aids; the most commonly used is the Von Pirquet, because of its ease of application and absolute freedom from untoward effects. A positive Von Pirquet connotes a tuberculous focus, active or latent, somewhere in the body; the mere presence of tubercle bacilli will not give rise to a positive cutaneous test unless specific structural changes have resulted. The younger the subject the greater the value that attaches to a positive Von Pirquet. Many of the infectious diseases, notably measles, will temporarily render a preexisting positive cutaneous test negative. According to Ellerman and Erlandsen³⁴, the reaction is most pronounced during the early stages of an active process and decreases in intensity with an extension of the diseased process or the decline of the vital forces.

Prognosis. Congenital, generalized and miliary tuberculosis invariably terminate fatally. The belief had been universal and, indeed, still prevails, that a diagnosis of tuberculous meningitis portends a speedily fatal outcome. In the light of the occurrence of authentic cases with recoveries, we are forced to concede that in certain rare instances the presence of tuberculous meningitis does not preclude the possibility of recovery. Bokay³⁵ reviews the literature pertaining to this phase of tuberculosis and has succeeded in collecting twenty-nine cases of tuberculous meningitis culminating in recovery, nineteen of which were in children. Recurrences were frequent and the average duration of the cure ranged from one month to five years. Not a single case of recovery was recorded in children under two years of age.

Tuberculosis in the very young frequently leads to general or meningeal tuberculosis.

Pollack²⁶ says that tuberculosis during the first year of life is almost never latent; during the second year fifty percent of the exposed develop the disease; in the third to

fourth year period about twenty percent of these opinions. Fishberg's¹⁹ observation fails to substantiate these statements. On tuberculosis. King and Weicher concur in the exposed become affected, fifth to sixth year five percent, seventh to tenth year five percent, and eleventh to fourteenth year about two percent; and he adds that of those infected during the first year seventy percent die before the expiration of the year and ten percent in the second year, and that but very few attain puberty; of those infected during the second year, about ten percent die; in the third to fourth years, about five percent die; and of those infected beyond five years, not over one percent succumb. Webb³⁶ is authority for the statement that the longer a region has been pervaded with tuberculosis, the lower the death rate; and he quotes Turban and Solly to the effect that the tuberculous offspring appeared to be endowed with heightened resistance to the contrary, he has noted a higher mortality in the tuberculous offspring, and Weinberg¹⁹ of Stuttgart corroborates this view. Beitzke's experience leads him to give the following prognosis: during the first year, two-thirds of the affected will die; first to fifth years, three-quarters; and sixth to fifteenth years, eleven percent. According to Hamburger, under one year ninety-three percent of the infected will succumb; one to four years, sixty-eight percent; and five to fourteen years, fifty-nine and seventenths percent. Bartel⁵ in one hundred and seventy-eight autopsies on children under five years failed to find a single case of healed tuberculosis. Rubin²⁷ is more optimistic concerning the fate of the child affected at an early age with tuberculosis. Of twenty-three children under one year so affected, one was alive and well at the age of five years, two at four, one at two and two at one year. Frank reports a child with a positive Von Pirquet at the age of thirty-six days who was alive and well when two years old.

The bovine type of infection is acknowledged to be far less malignant than the human form.

Prophylaxis. From the foregoing, it is evident that the child must figure promi-

nently as a factor in every movement calculated to check the progress of tuberculosis. Heretofore it has been accorded but scant, if any, consideration. The fundamental principle in prophylaxis consists in the removal of a child from a tuberculous environment, particularly during the first three or four years of its life; for at this period the body defenses are wholly inadequate to cope with tuberculous infection and the toll of death exacted is appalling. It should be emphasized at this juncture that according to Hamburger³⁵ a few minutes exposure may suffice to transmit infection to a child; and Webb³⁶ claims that as few as ten bacilli may be responsible for a tuberculous infection; and Roepke³⁸ contends that the exercise of the most extreme precaution will prove unavailing in protecting a child exposed over a considerable period to drop-let infection. It is ardently to be hoped that the brilliant results credited to the Oeuvre Grancher in France will stimulate the establishment of similar institutions in this country. During ten years of its activity over a thousand children were removed from a tuberculous milieu and properly cared for with only one death resulting from tuberculosis. Every effort should be bent toward insuring the highest degree of physical well-being in the children, especially during the stress and strain incidental to school life; and we must scrupulously guard him against all debilitating influences and all infections, particularly measles and whooping cough, which are notoriously frequent precursors of childhood tuberculosis. Nor are we to permit ourselves to be blinded to the real dangers that lurk in infected milk, by the bold claims of Riviere⁴⁰, Andword⁴¹ and others who not only deny that any possible harm can accrue from the use of unboiled bovine-bacilli-containing milk, but actually attribute immunizing effects to its ingestion.

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SHOULD GENERAL PRACTITIONERS REFER PATIENTS TO OPTICIANS?*

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It is now almost two and a half centuries since that remarkable diarist, Samuel Pepys, ended his diary in the following gloomy terms: "And thus ends all that I doubt I shall ever be able to do with my own eyes in the keeping of my Journal; I being not able to do it any longer, having done now so long as to undo my eyes almost every time I take a pen in my hand. . . . And so I betake myself to that course which is almost as much as to see myself go into my grave: for which and all the discomforts that will accompany my being blind, the good God prepare me!"

It has been said of the famous diary that without it the history of the court of Charles II could not have been written; and Garnett, the well known English historian, remarks: "We can never decide whether to be more concerned for the discontinuance of Pepys' Diary or thankful for the preservation . . . of the part he wrote."

These facts concerning Pepys and his diary are cited to illustrate the importance which eye strain may assume. The diary was kept between the years 1659 and 1669, and was closed when its writer was only thirty-six years old. His fear of blindness unfulfilled, he lived on until 1703, through all or part of the reigns of Charles II, James II and William of Orange. From the internal evidence of the diary it has been inferred that the eye symptoms of which

Pepys complained were due to hyperopia or farsightedness. It was a century and a half after Pepys' death before the medical profession learned and applied the general principles upon which the eye strain due to hyperopia and astigmatism might be satisfactorily avoided.

Today a very large percentage of our American population is wearing glasses, and in the majority of cases this is done for the avoidance of eye strain. The work of determining the correction needed is carried on by two classes of technical workers, the oculist and the optician or optometrist. Parenthetically it may be remarked that there are still many physicians, to say nothing of the lay public, who do not know that an oculist is a physician and an optician is not. Applied refraction owes its development to members of the medical profession. The optician, strictly speaking, is one whose work consists in preparing lenses according to given formulae. The name optometrist was somewhat recently coined to give a distinctive status to those among the opticians who devote themselves more extensively to measuring the refraction of the human eye.

About one hundred years ago neglect by the medical profession of the subject of dentistry, then in its infancy, led to the establishment of dentistry as a separate profession. It is now clearly the ambition of the leaders in the optometry movement to create with regard to the eye a profession which shall exist as definitely and as separately from the practice of medicine as does today the profession of dentistry.

Those of us who after many years of costly preparation have established ourselves in that special branch of the practice of medicine which relates to the eye may be disposed to feel that our personal rights are invaded by the optometry movement. But the only really firm foundation upon which this question may be considered is as it concerns the rights, or rather the needs, of the general public. Quoting from a paper which I wrote some years ago: "The plain fact of the case is that somebody has got to do the public's refraction work, just as somebody has got to do its plumbing, or its legal advising, or its elec-

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trical engineering, or its dentistry. Sooner or later the public will demand some guarantee that the man who undertakes to perform such work has the necessary training and skill."

The question which some sections of the public are at present proceeding to determine is whether the proper training in the science and art of refraction belongs only to the ophthalmic surgeon, or at least in satisfactory measure to the optometrist or optician. Many laymen do not understand that any essential difference exists between the two classes as regards their capacity for doing this kind of work; and it is possible that a not inconsiderable percentage of general physicians are equally uncertain as to the real facts of the case.

It is certain that patients are not infrequently referred by general practitioners to opticians for examination. In the great majority of cases, the reasons for doing this are perfectly honorable and without selfish motive. There is a group of physicians whose practice in this respect is very similar to that which they follow with regard to the reference of surgical cases; that is, a commission is expected and accepted, in the one instance from the surgeon, and in the other instance from the optician, to whom the case is referred. It is not the purpose of this paper to discuss the relations existing between this class of physicians and the optician. Their practice in this regard stands or falls very largely with their practice in the splitting of surgical fees. Fortunately, too, it may be hoped that the class is a small one.

The purpose of this paper is to consider to what extent, if any, it is justifiable for a general physician, in a perfectly disinterested way, to refer his patients to an optician for refraction.

In regard to patients who can afford to pay the customary oculist's fees, it may be stated without qualification that no satisfactory ground exists for referring such patients to opticians rather than to ophthalmologists. With regard to the poorer class of patients, who unfortunately constitute a very large part of the community, the prob-

lem is a somewhat more complicated one, and offers more room for argument.

In the mere matter of refraction alone, that is to say in the estimation of what glasses if any are needed by the patient, either for the improvement of vision or to obtain relief from strain, a very wide gulf exists between the skill of the ophthalmic surgeon and that of the optometrist. This is of course speaking in averages, since in skill as a refractionist the average optician or optometrist is immensely inferior to the average oculist. It is of course true, as in every other specialty, that some ophthalmologists are poorly qualified in refraction; and on the other hand it is rather naturally true that here and there will be found an optician or optometrist who has developed a very fair degree of refinement in this work. But in the main it may be said that the optician, if he has been taught at all, has been very inefficiently taught the principles and practice of refraction. In some instances he is merely a jeweler who believes that the fitting of glasses to the human eye offers an additional source of revenue, and who, armed with a test card and a trial case, some attractive and impressive window decorations, and plenty of nerve, but with almost no serious preparation, sets out to accomplish the financial result.

There is another side to this question which is much more serious than the mere mistakes which may occur in the estimation of what glasses are needed. Unfortunately many of the complaints made by patients regarding their eyes may be due either to a need for glasses or to the presence of some important disease condition in the eye. For example, a year or two ago there came to me a woman who had lost a large part of the vision of one eye and was beginning to suffer in the other eye from severe but slowly developing iritis. The day before she came to me she had visited a rather well known Denver optician, who informed her that the inflammation in her eyes was due to a need for glasses, and who promptly supplied her with a pair of simple spheres in a filled gold frame, charging her ten dollars for the outfit, and assuring her that it was unnecessary for her

to go to a physician, and that if she wore the glasses the inflammation would gradually disappear. Instances of the same sort of incompetency and dishonesty could be multiplied.

It must be remembered that a supply of native wit is not all that is necessary for taking care of the human body and its ailments. We in this country were so dissatisfied in the average with the kind of physician that many of the medical schools were turning out some years ago that we have lately very greatly raised the standards of education required of those who are allowed to practice medicine. Some opticians have not even completed a high school education; the great majority have never had a college training. Most of them who have been taught at all concerning the details of the human eye were self-taught. Their skill in the workshop may be extremely good; their skill in the dark-room or at the trial case is usually very limited.

The day may come, and I am personally disposed to believe that it will come, when there will exist outside of the medical profession a class of men recognized by the law as properly trained and competent in the general care of the human eye; but this will probably not be in our generation.

Even if an optician has a certain amount of training in the recognition of ocular disease, either external or internal, it must not be forgotten that there does not yet exist any state in which the law allows him the use of drugs for diagnostic or therapeutic purposes. It is to be supposed that such legal sanction will not be granted without proper requirements as to preliminary training. In the same connection, every general practitioner should remember that there is a very large percentage of cases in which the patients' refraction, or need for glasses, cannot be confidently measured without the use of belladonna or a similar drug for the purpose of cycloplegia, or the temporary paralysis of the muscle of accommodation. Many opticians have dishonestly circulated among the public a statement that the use of these drugs is unnecessary and dangerous, but it is correct to state that there is no such danger in the hands of one who is

not only competent but also takes all proper care to satisfy himself of the absence of any tendency to glaucoma in the eye which is to be treated. Upon this basis it would of course be very dangerous to entrust the use of these drugs to an optician, but it is quite safe for a competent ophthalmologist to use them. It may be stated that it is almost never justifiable to refract a child of primary school age without the use of a cycloplegic.

Reference has been made to that class of cases in which a patient is referred to the optometrist or optician because the general physician wishes to save the patient the expense of the oculist's fee. The situation here is often a difficult one for the family physician. But several criticisms may be offered on this line of thought and action. In the first place the ophthalmologist surely does not stand apart from the human traditions of the rest of his profession as to the care of the poor, but is as willing as any of his professional brethren to work in deserving cases for a reduced fee or no fee at all. It is to be hoped that the time is not far distant when the community will recognize the necessity for having this class of work done by public medical officers upon a salaried basis. For the present, however, the ophthalmologist must meet such calls in the common spirit.

If refraction is needed it should be done well or not at all. The patient who is given glasses which are not appropriate to his case is usually at least as badly off after as before incurring the incidental expense and bother. In a great many instances he is much worse off after than before. It is a common experience among ophthalmologists to meet patients who by going around from one optician to another and still another have at last expended without benefit a sum which would have paid the oculist's fee several times over. Here, as elsewhere, a wise expenditure is the best economy.

In the words of Donders, the Dutch ophthalmologist whose work on the anomalies of accommodation and refraction of the eye was prepared for an English edition at the request of the New Sydenham Society and published in 1864, and is generally re-

garded as the foundation of modern work in refraction, "In the doctrine of the anomalies of refraction and accommodation the connection between science and practice is more closely drawn together than in any part of medicine. . . . In the accurate distinction between anomalies of refraction and accommodation, with exclusion of every condition foreign to these anomalies, . . . the cause and mode of origin of many an obscure type of disease emerged into the clearest light".

Surely such work as this should be entrusted only to those who have had the necessary scientific training.

The purport of this paper may be summarized along the lines of the abstract which appears upon the program of this meeting: Opticians are seldom good refractionists; cannot legally use cycloplegics; and are not qualified to diagnose disease conditions of the eye. It is often therefore actually more expensive to patients, and may prove dangerous, to send them to opticians for expert advice on anything but the mechanical side of optical work.

530 Metropolitan Building.

DISCUSSION.

H. M. Thompson, Pueblo: This subject is of particular interest to the ophthalmologist. I know and I am sure that most of you appreciate that it is not presented on the basis of a selfish standpoint; but only with a true and sincere desire to promote efficiency in examination and refraction of the eyes, so that proper results may be forthcoming.

The optician and optometrist, being unfamiliar with disease changes in the eye and ocular therapy, should not be allowed to prescribe cycloplegics, because of the possible harm which might result if applied to the wrong case. Atropine, scopolamine and the like, are most indispensable on the one hand; on the other very dangerous, particularly where increased tension is present or in eyes which are predisposed to a glaucomatous state. Those who are familiar with refraction and understand the accommodative mechanism, realize how absolutely impossible it is to get an accurate result in correcting refraction errors in children and young adults without the aid of some form of medication to sufficiently relax the accommodation. Therefore, allowing that cycloplegia is necessary, it follows that the physician is the one individual who can give this class of patients proper and efficient service.

Melville Black, Denver: We must not kick the optician too hard because he is unwittingly a great friend of the oculist. He makes more business for the oculist than any one else. After he applies glasses, and the people go home, most of them ultimately go to the oculist. We need not fear the optician when it comes to the mon-

etary side of the question. If the optician was put out of business it would mean thousands of dollars every year out of the pocket of the oculist.

As to the question under discussion, should the physician send his patients to an optician? The answer is no. The patient's interest should be his sole concern. We all know, and every one who has had any experience at all knows that the relationship between the eye and the body makes it necessary to have a comprehensive knowledge of the entire subject, and that knowledge cannot be acquired by the optician. There are times, however, when the general practitioner in a small town is confronted with a major difficulty. There are people whose circumstances are such that they cannot afford to make a trip to consult an oculist. They need refraction work done and an optician comes along, puts his card in the newspaper, circularizes the town with a lot of fine sounding phrases, and what does the patient do? He may go to his family physician and say, "Doctor, what do you think of going to this man about my eyes?" The probabilities are the optician is the poorest of his cult; that he does not know his business, and will not be able to give the patient any satisfaction, and yet if the physician says to the patient, "You had better not go to this man, but go to an oculist", the patient may say, "I have not the money to do it; would I not better take a chance?" While there is the financial side to be considered, we, as physicians, should explain to our patients that the eye is nothing more nor less than the window of the brain, and that its relationship to the general nervous system is not to be trifled with. It is an organ that must not be tinkered with by men who do not understand their business. No one would think of having his automobile gone over by a carpenter. He would want the work done by an expert who knew how to locate the difficulties and how to overcome them.

Allen J. Nossoman, Pagosa Springs: Speaking in behalf of the doctors in the backwoods, I want to say that Dr. Black has been taking up a lot of valuable time, and there is nothing in what he says, for the majority of us country practitioners who practice in small towns absolutely refuse to have anything to do with traveling opticians.

F. E. Wallace, Pueblo: Just a word with reference to whether it may do any harm or not to refer patients to opticians. Dr. Black says that it is possible that it may not do any harm. Maybe not. However, I recall the case of a woman who came to me because of failing vision. She was wearing minus glasses. She had worn them for several years and they gradually developed in her case conditions which brought on inflammation and she lost the sight of one eye before I saw her. Enucleation was necessary. The other eye was being affected in the same way. I refracted her and found she needed a strong plus glass instead of a minus glass. I mention that instance as showing that harm can result. Instances of like nature can be multiplied.

B. B. Blotz, Rocky Ford: About three years ago, while visiting Dr. Deaver's Clinic in Philadelphia, one of the operations scheduled was enucleation of an eyeball. At the time of the operation Dr. Deaver told a story. He said, "You may think it is funny that I am not referring this case to a specialist", and he said, furthermore, "I am no longer a specialist myself; I am a doctor, and the reason for this is that about three years ago there was a trial in the city of Philadelphia in which on one side were arrayed a number of specialists in medicine, and on the other side a country practitioner. These specialists

testified first, and the side looked very favorable to the party who employed the specialists. As soon as this side had its innings, the country doctor was called to the witness stand, his name was asked as a matter of routine, and then the opposing lawyer put this question: "Doctor, what is the difference between a doctor and a specialist?" He naturally expected the answer that a specialist was more qualified in the practice of medicine and considered a more scientific man, but instead of that the country doctor replied, "It takes fourteen of these chaps to make a doctor." Since that time Dr. Deaver said he was a doctor, not a specialist. This does not apply, however, to our eye men; but I think a little frank discussion of these problems which confront country practitioners will be of benefit to all of us. I am a country doctor in the little town of Rocky Ford, and I am confronted with a good many problems from time to time. There are many things that start us thinking. One is a state law which requires children to have their eyes examined in case the teacher notices defects. What happens? My little patients come to me with a notice saying, "Johnny has a defect in vision". And what about it? Well, of course, I refer such cases or ask them to go to a competent man, as I do not make any attempt to do eye work. But what happens? As a rule, they go out and discuss the thing with other women or the child's parents do, and the first thing we know is that Johnny has a pair of glasses, and if you ask him where he has been, he will say he has been to some optician. So the law is a very poor one in that it stops at the half-way house. It should require and see to it that when Johnny is sent home with a little notice he cannot go back to school or can only go back to school temporarily until his eyes are examined. The law should go further and require Johnny to go to a man of some standing. This is a matter of education. I would make a plea for educating the parents of children in this respect, that it is necessary for their children to go to men of standing and not to charlatans. But there is something else wrong with the proposition. I do not like to censure the eye men, but what started me to thinking was this: A woman had consulted a man here in Colorado because of her child's defect in vision, and the child came back with a pair of glasses and it was insisted that the glasses be worn constantly. This child, when abroad, was taken to a specialist in Vienna, and in spite of what had been done previously the child was treated. Other conditions were found and the child came back with some defect in the external ocular muscles. I do not know much about eye work, but there seemed to be a lack of muscle balance there, and the patient came back with prisms in a sort of stereoscope in which he looked at pleasing pictures. He would spend hours in looking at these pictures, and that had a good deal to do with dispensing with the use of glasses.

I think the country doctor should be censured for not taking more interest in medical cases, and especially those cases that have a bearing on the eyes of children.

Dr. Crisp (closing): I merely wish to say that more of the general physicians should know something about refraction. Many country physicians, with relatively little trouble, could acquire a knowledge of refraction which would add to their own financial resources and would in a very marked degree increase their usefulness to their patients, as I am sure they could do this work at least much more satisfactorily than does the usual traveling optician.

News Notes

Some delay, and a considerable rearrangement of the contents of this issue of *Colorado Medicine* have been caused by a rather extensive fire which occurred in the linotype room of the Western Newspaper Union, printers of this journal, in the early morning of January 11th, the day when the January issue was to have been "made up". The type of several original articles which had been proof-read and were ready for use, was found "pied" on the floor of the room, and will have to be reset when the linotype machines are working again.

On account of the impossibility of running the linotype machines, a number of late corrections for this issue have had to be set by hand, with the result that they are in slightly different type.

The editor and other friends of Major Robert Levy were pleased to hear from him with greetings of the New Year season. It is reported that he will soon be relieved from army duties and resume his practice in Denver.

Captain F. P. Gengenbach has returned to Denver to resume the practice of pediatrics, having been honorably discharged from the army.

In a letter to Dr. J. M. Foster, Captain James Rae Arneill says that he hopes soon to be relieved of army work and return to Denver to take up his practice. He states that he has made an examination of every pneumonia case at Camp Kearney and has had charge of the officers' ward there.

Major A. C. Magruder, honorably discharged from the army, was fortunate enough to get back to Colorado Springs for Christmas dinner.

The editor confesses that he cannot write Chinese so well as English is written by the author of the following epistle, a Chinese medical student who was unfortunate enough to break an expensive piece of apparatus:

"Dear Dr. Leannix:

"I am very sorry infrom you, that I was broken your vorlable thing of proctocope of electrics, and I have been removed the reastart's degree over 4. Then the light was put out sudden.

"How is the stupid as I done, I big you to excuse me having had carefully on my duty."

Since Colorado is considering the passage of a bill to provide medical inspection in her schools, the following statement taken from the December issue of the news letter published by the National Committee for the Prevention of Blindness is of special interest: "Where medical school inspection includes examination of the eyes by a skilled ophthalmologist there is one sight-saving pupil to every 1600 of the school population; where such is lacking there is one sight-saving pupil to every 250 of the school population." In Ohio a new movement for the conservation of vision in children who were unable to keep up with their regular grade work was initiated in 1910, consisting in the establishment of separate classes for their care. There are now seventeen such "classes for the conservation of vision" in that state and ten in Massachusetts. It is stated that where adequate treatment is provided for children in these classes, thirty-three and one third per cent can be returned to the regular grades. A sight-saving pupil is one whose sight is so poor that he can only carry on regular school work under special teaching conditions.

Major A. J. Markley of Denver was honorably

discharged from service in France and has returned to Denver to resume the practice of dermatology. He will be located in his old offices, 332 Metropolitan Building.

Captain O. D. McKenzie of Denver has been honorably discharged from the army and is again in Denver for the resumption of practice.

Captain H. R. McGraw stopped to spend a short furlough in Denver on his way to Whipple Barracks, Arizona, where he has been assigned from Fort Oglethorpe.

Dr. I. C. Mierley of Denver has received an honorable discharge from the army.

Captain C. W. Presnall of Trinidad has been honorably discharged from army service.

Dr. Carl W. Maynard of Pueblo was reported as convalescing from influenza and pneumonia in the latter part of December.

The Department of Labor and Industry of the state of Pennsylvania holds semiannual conferences of industrial physicians and surgeons and for that reason is anxious to get a complete list of doctors in this state and elsewhere who are engaged in industrial practice. Those interested can get their names upon the mailing list by furnishing their addresses to Dr. Francis D. Patterson, Chief, Division of Industrial Hygiene and Engineering, Department of Labor and Industry, Harrisburg, Pa. The next conference is to be held early in 1919.

Dr. O. L. Prien was sent early in December from Mercy hospital, Denver, to Kersey for temporary service in handling influenza, the only local physician, Dr. Bower, having died in October.

Dr. C. O. Epley, formerly of Durango, has recently changed location to Spirit Lake, Iowa.

If the proposed bill for medical inspection in the public schools is passed by the state legislature, the school directors of any school district of the first or second class may, at their discretion, employ one or more medical inspectors, one or more dental inspectors and one or more persons as school nurses, prescribe their duties and give them compensation out of the funds of the district.

Lieutenant L. H. Wade of Denver has been transferred from a base hospital at Fort Oglethorpe to general hospital twenty-seven, Fort Douglas, Salt Lake City, Utah.

Dr. A. G. Taylor of Grand Junction has been mustered out of service and will return to his home town to resume civil practice.

Dr. A. E. Smith has been discharged from the service and has returned to his home in Rifle, resuming his practice.

On request from his community, Dr. B. B. Blotz of Rocky Ford has been released from army service and allowed to return home to aid in the care of influenza patients.

Captain Laurence M. Taylor of Denver is reported to have sustained a bad wound of the face, in action at the front in France.

Captain C. G. McEachern of Denver has been transferred from Camp Devens, Mass., to general hospital number ten, Boston, Mass.

Captain T. C. Taylor of Fort Collins, who has been at Fort Leavenworth, has been mustered out of service and is again in practice at his home town.

Among the deaths noted during the past month are those of Dr. Roscoe Healy, formerly of Denver, who died of influenzal pneumonia at St. Louis, Mo., and Dr. James R. Stewart of Colorado Springs, also a victim of influenza.

Dr. Melville Black writes: "A consultant in internal medicine has been appointed for each of the four subdivisions of the army camps of the

country. Major J. N. Hall of Denver has been honored by this appointment for the southwestern division. This news will come as a mixed pleasure to Major Hall's many friends, in that we glory in the honor conferred upon him, but deplore the fact that it means a continuation in the service for at least several months. We understand that a similar honor has been conferred upon Major Oliver Lyons, of Denver, as regards the American base hospitals in England. Too bad our Colorado men are so popular! They are really needed at home." It is reported that Lieutenant J. W. Ames and Major Dean recently returned from Europe and are serving in the eastern United States.

Captain H. G. Wetherill has received an honorable discharge from the army. He left Denver January 18 for California and will return about May 1.

News has just been received of the death in camp of Oliver Hall, younger son of Major J. N. Hall.

The Haswell Herald states that the town is without a doctor and that one is very much needed there to practice in Kiowa, Lincoln and Cheyenne counties.

At the annual meeting of the Boulder County Medical Society, held January 1, Dr. Jacob Campbell was elected president, Dr. Walter L. Snair of Louisville first vice-president, and Dr. A. J. Hetherington second vice-president. Dr. C. W. Poley was reelected secretary-treasurer.

Dr. Frank M. McCartney has been elected president of the staff of St. Anthony's Hospital, Denver, Dr. George W. Miel vice-president, and Dr. W. F. Matson secretary, for the year 1919.

The Scholtz Drug Company of Denver is furthering the propaganda for the proper care of venereal diseases by handing to customers who ask for proprietary remedies for such diseases a confidential circular in which are explained the seriousness of these diseases, the danger of applying to advertising quacks for treatment and the inefficacy of self-treatment with proprietary or other preparations. The applicant is urged to go at once to a reliable and conscientious physician.

OUR ADVERTISERS.

The advertising in the journal of the American Medical Association and in almost all the state medical journals is a thing apart from and above the advertising in most other periodical publications. All the journals coming within this distinctive classification are pledged to reject any advertising which does not conform to the ethical rules of the Council on Pharmacy and Chemistry of the American Medical Association. This journal has, from its inception, made it a rule to adhere to that standard. It is further a principle of the management of Colorado Medicine not to print any advertising matter in the reading pages, even in the form of "readers"; although the practice of using such "readers" is unfortunately extremely widespread throughout periodical literature.

Since the cost of publishing Colorado Medicine comes out of the pockets of the members of the Colorado State Medical Society, through an annual appropriation from the membership dues, it is distinctly to the interest of our members to favor those individuals and firms who advertise in Colorado Medicine; and we do not hesitate to urge this practice upon our readers. They have only to glance through the list given below, which contains the names of all the ad-

vertisers in the current issue of Colorado Medicine, to realize that the individuals and concerns there mentioned belong to an exceptionally reliable class.

Strengthen the financial position of your state medical journal by supporting its advertisers!

The Abbott Laboratories.
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Mount Airy Sanatorium.
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Physicians' Casualty Association.
The Quaker Oats Company.
The Scholtz Drug Company.
E. R. Squibb & Sons.
Standard Oil Company.
Katherine L. Storm.
Taylor Instrument Company.
Victor Electric Corporation.
Waukesha Pure Food Company.
Paul Weiss.

New and Nonofficial Remedies.—During December the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A., for inclusion with New and Nonofficial Remedies:

Non-proprietary Articles: Benzyl Benzoate; Emetine Bismuth Iodide.

Abbott Laboratories: Emetine Bismuth Iodide (Abbott).

Hynson, Westcott and Dunning: Benzyl Benzoate—H. W. and D.; Solution of Benzyl Benzoate, Miscible—H. W. and D.

Merck and Company: Diethylbarbituric Acid—Merck; Diethylbarbituric Acid—Merck Tablets, 5 grains; Sodium Diethylbarbituric Acid—Merck; Sodium Diethylbarbituric Acid—Merck Tablets, 5 grains.

H. K. Mulford Company: Bismuth Emetine Iodide—Mulford; Cachets Bismuth Emetine Iodide—Mulford, 5 grains.

E. R. Squibb and Sons: Chlorinated Eucalyptol—Squibb.

Takamine Laboratory: Arsamine, Tubes of 0.1 Gm., 0.2 Gm., 0.3 Gm., 0.4 Gm., 0.5 Gm., 0.6 Gm.

Medical Societies

CITY AND COUNTY OF DENVER.

The deferred business meeting of the Medical Society of the City and County of Denver was held Tuesday evening, November 19, 1918. President Moleen presided.

Dr. H. G. Wetherill reported the progress of the committee on a design for a physician's automobile emblem and asked that the committee be continued.

"That the president of this society appoint an-

nually a committee of three members upon pharmaceutical relations," was the motion of Dr. Miel. It was adopted after being discussed by Drs. G. A. Moleen, G. M. Blickensderfer, W. H. Crisp, W. H. Sharpley and C. D. Spivak.

In a communication from the Public Health Association read by Dr. Wetherill a number of reasons were given why Denver should erect and maintain a hospital for the treatment of tuberculosis. His motion that the society appoint a committee to memorialize the mayor and council, endorsing such a measure, was carried after it was discussed by Drs. W. H. Sharpley, C. A. Ferris and C. D. Spivak. The president then appointed the following committee: Dr. H. G. Wetherill, Dr. Henry Sewall and Dr. G. W. Holden.

It was decided to call a special meeting for the following evening to hear Dr. Woods Hutchinson speak on Influenza.

Chancellor Henry A. Buchtel, who had received a letter from the American Council of Education in regard to the visit on December 11 of Prof. Theo. Reinach, Dr. Etienne Burnet of the Pasteur Institute, who is a surgeon in the French army, and Seymour de Ricci, asked the Medical Society whether it might care to invite Dr. Burnet to address them in a special meeting. It was moved and carried to call such a meeting and a committee on arrangements was appointed.

Dr. O. M. Shere gave a case report of a child's fractured skull, with the exhibition of the patient. He said such cases were important not only because of immediate conditions but also because of what might develop in the future. He emphasized his belief, when in doubt operate and operate early. The discussion was by Dr. E. Friedman, Dr. G. E. Neuhaus, Dr. C. A. Ferris and Dr. G. A. Moleen.

MARY R. STRATTON,
Reporter.

The regular meeting of the Medical Society of the City and County of Denver was called for Tuesday evening, December 3, 1918. As a quorum was not present, the meeting was adjourned.

The regular meeting of the Medical Society of the City and County of Denver was held Tuesday, December 17, 1918. President Moleen presided.

The following were elected to membership: Drs. Arthur Clyde Asquith, Morris Jacob Baskin, Samuel Swezey and Harmon Tremaine.

Dr. Oswald S. Lowsley, Chairman-elect of the Genito-Urinary Section of the New York Academy of Medicine, gave an address, illustrated by lantern slides, upon the prostate gland. He traced the embryologic and morphologic structure. In case of surgery of the gland, he said that the first and most important item is the preparation of the patient which consists principally of drainage. Before operating, a twenty-four hour specimen of urine should be examined, a chemical blood test should be made, a phenolphthalein test to obtain the maximum kidney efficiency should be given, an X-ray study should be made, and a cystoscopic examination of the bladder should be made. Dr. Lowsley's method of operating is the same as Young's, which is by the perineal route except in the following cases: (1) when the gland is too large; (2) when it protrudes too far into the bladder; (3) when the cervical glands are enlarged; and (4) when there is a preexisting suprapubic wound.

The society extended Dr. Lowsley a rising vote of thanks for his excellent address.

Dr. Henry Sewall (see February issue) gave a review of influenza as seen in the medical wards of the County Hospital from October 1 to

December 1. He called attention to the lack of scientific investigation and to the few autopsies which had been made. These more readily find attention in a hospital which is under university supervision than in one under other control. During these two months there were 535 cases, averaging two males to three females. They were mostly from the physically robust and from twenty to forty years of age. From this number there were 144 cases of pneumonia and 171 deaths. Some were moribund when brought in and others died within twenty-four hours. He found the spleens enlarged. The pneumonias were mostly of the lobular type with a predilection for the lower lobes and for the left more often than the right. Just ahead of finding pneumonia, showers of crepitant râles, probably due to edema were often heard. In the way of treatment he emphasized early rest. The discussion was by Capt. G. A. Anderson, Drs. W. N. Beggs, G. W. Miel, and G. A. Moleen. MARY R. STRATTON, Reporter.

PUEBLO CLINICAL AND PATHOLOGICAL.

The annual meeting of the **Pueblo Clinical and Pathological Society** was held December 11, 1918, at the Congress hotel, Dr. C. W. Thompson presiding. There was a good attendance. After the usual dinner, Dr. C. W. Thompson, the retiring president, presented an interesting paper on "The Psychological Factors in Medical Practice." Having heard his varied observations and conclusions, it behooves the profession that it confess its derelict attitude to a most valuable fundamental, in the treatment, and the attainment of results in medical therapy, as applied to certain types of cases. He maintained that the numerous faith healers and members of similar cults, at times, gain important success, notwithstanding their inability to consciously or properly evaluate these mental factors. After broadly defining psychology and stating the objects with which the subject deals, he mentioned that for the understanding of the mental state of another, one must observe the other's conduct and translate the activities of which he becomes conscious into terms of his own feelings, sensations and so forth. Carefully reviewing the aims of medical science, he rightly concluded that a knowledge of pathology is a valuable asset with a proper understanding of the necessary allied sciences; that they all are essential, but that the primary and final object is to relieve the sufferer. Further on he added that "to limit the teachings of anatomy, physiology, pathology, bacteriology and other medical sciences to those facts of known application, would not only retard the progress of medicine, but would tend further to enlarge the angle between those who seek to advance medicine and those who apply the precepts with which they are furnished". The writer compared the attitude of men toward some of the recognized medical sciences twenty-five years or more ago with the present general position assumed towards psychology, although some few are urging a closer union between psychology and medicine.

It was gratifying to hear Dr. Thompson review the findings and assertions of Crile, on how emotional conditions are the exciting causes of different bodily diseases. All who have read Crile's conclusions should agree with him and help promote the very thing which is so nicely proved and advocated in this paper. His review of numerous cases helped to bring more in evidence the predominance of this mental factor in different forms of disease. The essayist deplored the

failure of medical men to appreciate the mental aspects of diseases and attributed nonsuccesses, with certain types of patients, to this neglect. Because of the apparent ignoring of the psychological factors, the disregard of the possible effects of the mind upon the body, they have indirectly been the cause of the exploitation of many of their fellows by mind curists and the like. In conclusion, he asked the physician to give greater attention to these essential factors to the end that the future therapist "will look at his patients not as cases, but as persons; not as machines, but as sentient beings". This interesting paper would be good reading for most of our obdurate pathologists who believe only what they themselves can see and feel.

The following officers were elected for the ensuing year: Capt. Wilbur Lucas, president; Dr. Royal H. Finney, secretary-treasurer; Dr. W. T. H. Baker, historian; Dr. Henry M. Thompson, reporter.

Drs. W. F. Rich and John W. Thompson were elected to membership. Dr. Thompson is now serving as ophthalmologist and sanitary inspector of evacuation hospital No. 17, Siberia.

In appreciation for the best historical review ever delivered before the society, Dr. Baker was unanimously elected to the office of historian for the third consecutive year. His talk last year was greatly enjoyed by the society, but the detailed report of the interesting facts which have been brought out by the meetings throughout the year has never before been so carefully and interestingly presented as it was on this occasion.

Dr. Herbert A. Black called attention to the injustice and unfairness at times shown by governors of Colorado in appointing men to medical positions who were not endorsed by the medical profession, and were not members of the Colorado State Medical Society.

Captain Lucas spoke on the great need for representative men on our health boards, so that the community may not look in vain for proper results in great emergencies. The present epidemic, one of the most severe that has ever darkened our shores, calls for stern and bold action. In referring to the national army, he said that a large sick call is no credit to the medical officer who is responsible for the health of the command. In former wars, the medical department was inefficient because of the little authority allowed the medical man, but with better recognition, the accomplishments in this great emergency will bring to the personnel of the medical department an authority more in keeping with the size of the task. This rapid but highly trained and well organized body of men have produced results under the most trying conditions, which should make the public think, thereby realizing that this great national body of scientific workers will do for each and every community the same as it has done unselfishly and with sacrifice for the army.

HENRY M. THOMPSON,
Reporter.

Book Reviews

A Manual of Otology: by Gorham Bacon, A.B., M.D., F.A.C.S., Formerly Professor of Otology in the College of Physicians and Surgeons, Columbia University, New York; Aural Surgeon, New York Eye and Ear Infirmary; Consulting Otologist, Roosevelt Hospital; etc. Assisted by Truman Laurance Saunders. A.B.,

M.D., Assistant Professor of Laryngology and Otolaryngology, College of Physicians and Surgeons, Columbia University, New York; Aural Surgeon, New York Eye and Ear Infirmary; etc. Seventh Edition, Revised and Enlarged. Two Hundred and Four Illustrations and Two Plates. Lea & Febiger, New York and Philadelphia. 1918. Price, \$3.00.

This is a new edition of a work that has already proved its value as a text-book and a compact book of reference for the busy practitioner. This edition has not only been thoroughly revised but has been enlarged by the addition of forty pages of new material and illustrations. The descriptions of catarrhal affections and polypi of the nose and nasopharynx which were in the former editions, have been left out because Dr. Bacon feels that these subjects properly belong in a text-book on rhinology.

As a foundation, the anatomy, the physiology and the methods of examination of the ear are the first subjects dealt with. Then Dr. Bacon discusses the diseases of the auricle, external auditory canal, injuries as well as diseases of the drumhead, and acute middle ear affections.

The chapter on adenoid growths, enlarged tonsils and submucous resection of the nasal septum, and the part on the suppurative inflammation of the labyrinth, have been revised by Dr. Truman Laurance Saunders.

It is in a very thorough way that Dr. Bacon treats of chronic catarrhal and suppurative diseases of the middle ear, granulations and polypi, caries and necrosis of the temporal bone, and diseases of the mastoid and intracranial complications. Especial attention is paid to the symptoms and diagnostic tests of labyrinthine involvement. This chapter also gives the ear tests required by the United States government of candidates for aviation service.

This excellent book closes with short chapters on the diseases of the sound perceiving apparatus, and on deaf mutism. In the appendix are directions for preparation of smears, for cultivation of infecting organisms and for experimental physiological inoculations.

M. R.

The Seriousness of Venereal Diseases. By Sprague Carleton, M. D., F. A. C. S. Published by Paul B. Hoeber, New York, 1918. Price, 50c.

This little brochure, dedicated to Base Hospital Number Forty-eight and given by the author to the personnel of that organization, is very ably gotten up for the purpose for which it was intended. In it one finds concise descriptions of the three venereal diseases, i. e., gonorrhea, syphilis, and chancroidal infection. All very well illustrated, and intended for the lay mind, this small work is worth while for the reasons that the seriousness of these diseases is well demonstrated, and that attention is called to the fact that not only is cure possible, but cure is accomplished in practically all cases that have proper attention. In the closing is to be found a list of rules as to the conduct of the patient suffering from gonorrhea, for his protection, as well as that of others; likewise a list of rules for the person suffering from syphilis. If this brochure saves one person from the after evils of these diseases, it will have been well worth while.

W. M. S.

Transactions of the College of Physicians of Philadelphia: Third Series, Volume the Thirty-ninth, 1917. Printed in Philadelphia for the College.

Following lists of the presidents of the College

from its institution, in 1787, to 1917, covering one hundred and thirty years, of officers, standing committees, Fellows of the College (some four hundred sixty-nine), associate Fellows, etc., the book contains first the president's address of January 3, 1917, followed by various papers and addresses presumably presented before the College in the year, arranged in the order of their presentation. An appendix gives the proceedings of the sections on ophthalmology, otology and laryngology, general medicine and industrial medicine and public health; a list of prizes and lectures, and the annual report of the library committee.

The articles deal with various phases of medicine, surgery, roentgenology, etc. There is one by Col. T. H. Goodwin on The Problem of Dealing with Venereal Diseases in Great Britain.

F. B. S.

For Better Rural Health—Much remains to be done in rural districts, according to the annual report of the Secretary of Agriculture, to control such pests as mosquitoes and the hookworm, to eliminate the sources of typhoid fever, and, even more, to give the country districts the advantage of modern hospitals, nursing and specialized medical practice.

Noting that many agencies, some of them private enterprises with large funds, are working for improvement, the report says that the Department of Agriculture, through its home demonstration service, is giving valuable aid, and the public health service is increasingly extending its functions.

To what extent the further projection of effort is a matter for state or local action remains to be determined, says the Secretary, but it seems clear that there should be no cessation of activities until there has been completed in every rural community of the Union an effective sanitary service and, through the provision of adequate machinery, steps taken to control and eliminate the sources of disease and to provide the necessary modern medical and dental facilities, easily accessible to the mass of the people.

The Effect of Blood Transfusion on the Development of Tuberculosis—Mayer and Hurley, of the Trudeau Sanatorium, Trudeau, New York, report interesting preliminary studies on the effect of the transfusion of blood to sheep that had been inoculated with bovine tubercle bacilli. They made three sheep tuberculous by intravenous inoculation. They then transfused one of these sheep with the blood of a normal sheep; a second, with the blood of a sheep that had been immunized by several inoculations of human tubercle bacilli and by tuberculin (B. E.); and the third was allowed to serve as control without transfusion. The tuberculous sheep that received normal blood apparently received no benefit from the transfusion, but an autopsy exhibited the same amount and degree of tuberculosis as the non-transfused control. The sheep, however, that had been transfused with blood from the immune sheep had at autopsy markedly less tuberculosis than the normal control or the animal transfused with normal blood. The authors believe that the findings are suggestive to show that normal blood in repeated transfusion is of slight value while blood containing anti-bodies is possibly of considerable value.—*American Review of Tuberculosis*, 1918, vol. 2, No. 10.

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Editorial Comment

THE DISCHARGED TUBERCULOUS PATIENT.

We no longer believe that the whole duty of the community to the tuberculous begins and ends with the sanatorium. We are aiming to prevent tuberculosis by educating the public to avoid those conditions which favor its development; and we are at the same time learning more and more that sanatorium treatment is for the most part a failure unless it is made merely the first step in a lengthy plan of watchful care and teaching.

The earlier follow-up work of the sanatoria, says Lyman (*American Review of Tuberculosis*, vol. 2, p. 615), was prompted by the desire of the institutions to furnish the public with proof that tuberculosis could be cured through this agency. Important foundations for the care of the tuberculous, whether supported privately or publicly, found that their strongest argument in maintaining and increasing the funds at their disposal lay in statistics of the earning capacity of their discharged patients.

In other words, the average layman wishes to know "whether it pays". If you can persuade him that his pocket will be emptier as the result of neglect than from early expenditure upon timely care, he is usually willing to add to his taxation or to place his name upon the subscription list.

Gaylord Farm Sanatorium, Connecticut, has been able to keep track of all but 22 out of 1,112 patients in the course of ten years of work. The statistics showed that the discharged patients had in this time already earned \$1,339.00 as against an entire cost

of \$400,477 upon the maintenance of the institution (including interest at five percent on construction and equipment).

Important information was also furnished as to occupations desirable for the tuberculous. Patients of the class dealt with in the sanatorium did better when they returned to their own work than when they tried to find the illusive "light job out of doors". The factory workers held their condition distinctly better and the office workers far better than the outdoor workers. The data have satisfied Lyman that the problem in Connecticut is largely one of early diagnosis and supervision after discharge, and that as a rule it is not necessary for the patient to change either his residence or his occupation.

Comparing the results at Gaylord with those obtained at Otisville, New York, Lyman expresses the opinion that the greatly better results in patients after leaving the sanatorium at Gaylord than were obtained in New York are due to the fact that most of the Connecticut cases earn a comfortable living wage, the average earnings of the men from Gaylord having been \$21.37 per week, while those of the men from Otisville were only \$9.81.

It was found that the plan of holding reunions of old patients was very helpful in maintaining their interest in the sanatorium and in securing replies to letters as to their condition. The majority of sanatorium patients become careless of themselves within a short time after leaving the institution. The experience at Gaylord, says Lyman, is merely an illustration of the fact that no public health work can be brought to its highest development until it is carried to the people in their homes.

It is fully as necessary to educate the patient's family as the patient himself. It was found, in fact, that perhaps the most valuable of all the activities of the visiting nurse was in the education of the patient's family. To a large extent it proved possible to begin the education of the home circle before the return of the patient, instead of leaving it to the patient to do uphill work in this direction. Residing at the sanatorium, she made it her business to become acquainted with the family on visiting days. She was thus able later on to visit the home as a personal friend, and so to explain to the family the importance of its attitude toward the patient and toward the routine of his daily life on returning home.

Another important accessory function of the visiting nurse was to secure valuable data as to the patient's personal or family history, such as the patient himself had either forgotten or deliberately concealed. She also obtained useful side lights on the character and idiosyncrasies of the patient, and unearthed personal and family worries such as are often a great drawback to a successful "cure". Patients who were inclined to delay action concerning a slight return of fever, a falling off in general vigor, or even a slight hemorrhage were often persuaded by the visiting nurse to seek medical advice at once and thus ward off a serious relapse.

There can hardly be any question as to the advantage and even the positive necessity of follow-up work among the tuberculous. The cost of cooperation between local boards of health, physicians, charity organizations, visiting nurses, local tuberculosis associations, and the sanatorium would be paid many times over by the increase in length of life and in earning capacity of the patients.

THE ART OF LIVING.

Since the vast majority of men, women and children are infected with tuberculosis at some time in their career, it is evident that the problems involved in dealing with tuberculosis must be almost as broad as the problems of life as a whole. The art of

curing tuberculosis is largely the art of living. In this regard, the therapeutics of tuberculosis is as the quintessence of the art of healing, which attracts the best men to its ranks because to master it they must be students of humanity. And the study of humanity must be applied not merely to the bodies of men, with details of nutrition, work, play and rest, but to their minds, including the instinctive and the more deliberate reasoning faculties, and also to those more subtle elements of consciousness which we group vaguely as the soul.

From this point of view, the book which D. Macdougall King of Denver has written and published under the title "The Battle with Tuberculosis"* might well be renamed "The Battle of Life." It is a matter for much praise that Dr. King has shown himself to be a physician in the broadest sense, and that his literary contribution to the subject of tuberculosis combines with clarity and charm of style a rare catholicity of understanding of the finer details of this greatest of all battles against disease.

In the development of Dr. King's ability to tell others how to win the battle, it did not count for nothing that he himself went through an acute pulmonary tuberculosis of the most generalized type, with laryngeal involvement which "enforced a complete confinement to bed for over two years, and at times made thought of recovery seem impossible". In this way, as the physician-patient, he became thoroughly familiar with those forces of invasion and resistance which he so well describes for the lay reader. He has gone through the "promise of victory", the "reverses", the "days of peace", and the "war clouds" which he discusses in four separate chapters. It was perhaps as a teacher of medical students that he acquired his facility and directness in the presentation of anatomic and physiologic detail.

In discussing the value for health of regularity, system, and hygienic living, Dr. King suggests that it has become "the thing" in the United States "for men and women to be so terribly busy with work or with social engagements, which in many

*The Battle with Tuberculosis, and How to Win It. J. B. Lippincott Company, Philadelphia.

women amounts to the same thing, that they have positively not the time to live healthily". He has a word of kindly condemnation for the woman who is obsessed with the idea that her life must be sacrificed for those around her, and who resents as unfair and unappreciative the suggestion that "she should lie down during part of the afternoon for a rest".

Many a doctor who has struggled in vain with the neurotic patient whose active tuberculosis was probably due to the fact that from childhood he had been lacking in central control will appreciate the value of the advice to the patient that "it is well that you should realize, and realize early, that you have come to the parting of the ways, and that two roads lie before you—one the pleasant path of Self-indulgence; the other the rough road of Renunciation. The one is smooth and inviting to travel The road of Renunciation is steep and rocky and anything but inviting but finally, away in the distance, you discover the dawn of a new day." And the same lesson is necessary for some of those whom we should probably number among our best citizens: "If recovery depended only on doing some big task, these patients would work the flesh off their fingers in the effort at achievement, but because victory depends on renunciation, or doing practically nothing, one out of every two is vanquished in the conflict." "Recovery from tuberculosis depends to a very great extent on implicit obedience to one's own commands if you have not enough self-control to make yourself lie quiet for an hour without amusing or entertaining yourself in some way, it is not to be wondered at if you fall an easy prey to seductive enjoyments."

Why, we are asked, when patients improve so rapidly under sanatorium treatment, do they go to pieces so quickly on their own resources? "Simply because they have not enough of two requisites: self-control and money", says Dr. King. Undue exercise of the emotions is dangerous to anyone, but is more dangerous to the sick man than to the well. Perhaps the most dangerous emotional foe of the tuberculous is fear, which, in the chronic form, is simply

what we know as "worry". There is a deep lesson in mental calm in the answer to the question: "Worry is fear, but why are we afraid?" "Simply because we want our own way, and we have a depressing inward fear that we won't get it " "The everyday method of combating worry is to go in search of a good time but there results fatigue, and just as soon as the excitement is over, worry returns with sharpened claws."

A book such as Dr. King has given us, so rich in thought for both physician and patient, places its author among the shining examples of those spoils of battle concerning which Trudeau of Saranac wrote: "The struggle with tuberculosis has brought me experiences and left me recollections which I never could have known otherwise, and which I would not exchange for the wealth of the Indies!"

Original Articles

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.*

M. O. SHIVERS, M. D., COLORADO SPRINGS.

Surgical care of pulmonary tuberculosis has received little attention at the hands of American surgeons. We have not only permitted our friends across the sea to develop the technic, but also to do largely all the work in this important field. There exists a class among the tuberculous whose lives are burdened with aggravated symptoms that do not yield to ordinary measures. In this class there is a small number who are entitled to surgery, still the aggregate is large when the number of hopeless pulmonary cases is considered. The existence of this large number of hopeless individuals who do not yield to every-day treatment is sufficient stimulus to urge one to attempt most vigorous methods to give relief to this class of human wreckage.

The position of surgical treatment for pulmonary tuberculosis is not well established. McDuffie states that surgical procedure is

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.



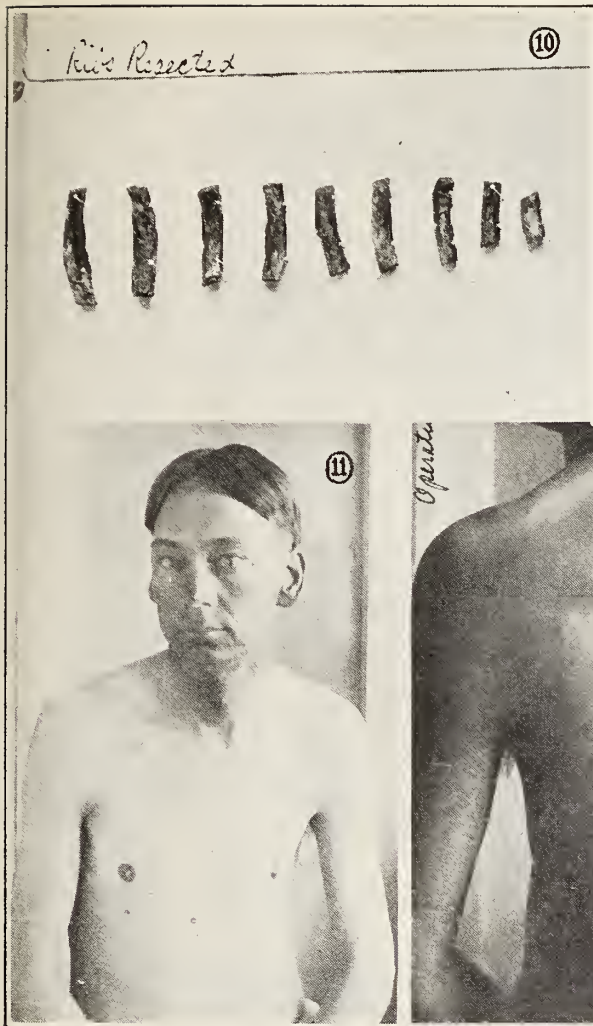


Fig. 1—Anesthetising skin.

Fig. 2—Anesthetising superficial muscles.

Fig. 3—Anesthetising nerves proximal.

Fig. 4—Anesthetising nerves distal.

Fig. 5—Incision of skin and superficial muscles.

Fig. 6—Incision through deep muscles down to ribs.

Fig. 7—Resection of ribs.

Fig. 8—Suturing of muscles.

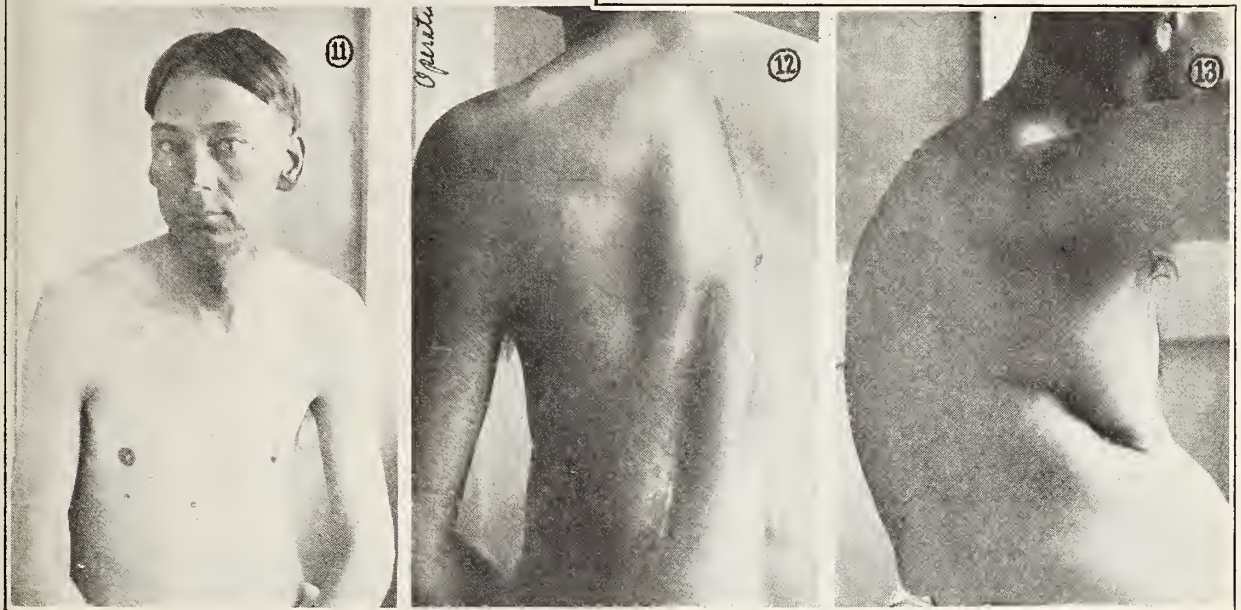
Fig. 9—Suturing of skin.

Fig. 10—Ribs resected.

Fig. 11—Results of Sauerbrück operation.

Fig. 12—Results of Sauerbrück operation.

Fig. 13—Results of Schede operation.



more frequently indicated in pulmonary tuberculosis and less frequently in bone and gland tuberculosis and tuberculosis of special parts than commonly recognized. Conservatism on the one hand plus surgical aggressiveness on the other hand will do much to settle the unanswered question, "Are the hopelessly tuberculous entitled to surgical care and is operation justifiable in the presence of so high a mortality and so small a percentage of permanent cures?" At the outset we beg to state that cases classed as operative are discards, that is, passed on as hopeless and not amenable to any other plan of treatment.

Pneumothorax stands out today as the most valuable achievement in modern treatment of the tuberculous. The indications for pneumothorax are so clearly defined in recent literature that tabulation is unnecessary. The principle of organ rest was first conceived by Carson. Forlanini, Murphy and Brauer were the first to apply organ

rest to pulmonary tuberculosis by means of pneumothorax. Sauerbrück must be given credit for the most satisfactory method for extrapleural collapse in the tuberculous. Many others have contributed to this important method of cure. From the pneumothorax class it is an easy matter to determine the type of tuberculous patient that merits surgical intervention. Being a case where pneumothorax is indicated, but cannot be given, classifies it as surgical.

What are the conditions that prevent pneumothorax in a patient entitled to lung collapse? There is one and only one, namely, fixation of the lung to the chest wall by adhesions. Surgery is not indicated in the acutely ill. The lung must have resisted the infection and shown positive signs of defense before operation is undertaken. Repeated efforts to collapse the lung by means of air or nitrogen without results is sufficient evidence of differentiation. Extrapleural lung collapse should never be under-

taken where pneumothorax can be accomplished and should not be attempted until pneumothorax has been thoroughly tried by a competent physician and failure is certain as proved by the roentgenologist. In a case where pneumothorax is indicated and cannot be given, death is inevitable. Any method that offers hope to the hopeless is justifiable, even though the mortality is high and permanent cures are few. We believe that surgical collapse bears the same relation to this class of tuberculosis as gastrectomy does to carcinoma; the Percy method to uterine cancer; and possibly splenectomy plus transfusion to pernicious anemia.

If a surgical procedure is indicated in pulmonic tuberculous cavities, then it should be clearly a rational measure in old empyema and bronchiectasis. Estländer's operation failed in that collapse was incomplete, consequently Schede went one step further, resecting ribs and pleura over the cavity and plugging with muscle and overlying skin. While his method produced shrinkage and collapse, still the nature of the procedure made a successful outcome relatively rare, due, first, to inability to get the second rib; second to the loss of connective tissue, intercostal muscles and thickened pleura which should be used in producing a cure; third, to operating in an infected field. The Fowler-Delorme operation is theoretically ideal and were it not for the many pathological impossibilities, the plan of obliteration from within should be the method of choice in chronic empyema. The Tuffier-Loewy method applies to apical tuberculosis where adhesions prevent mobilization by pneumothorax. Any method that does not obliterate the cavity must fail. The operation as done by Samuel Robinson, namely, resection of ribs, intercostals and pleura, with muscle implantation, approaches the ideal in selected cases of empyema but is of no value in tuberculous cavities and permanently crippled tuberculous lungs, furthermore carrying with it the same disadvantages as the Schede operation, namely, the loss of tissue, impairment of circulation by cutting all intercostal vessels, thus increasing hemorrhage, more

trauma by removing pleura, with consequent shock. Why operate in an infected field, when collapse can be maintained operating in a noninfected field without sacrifice of tissue, save ribs? We know that the lining of the cavity is not the cause of failure to cure. Were this true, all surgical efforts would be futile, as none of the accepted procedures excise all parts of the lining membrane. Obliteration of the cavity is the key-note to cure, and this can be done by the Sauerbrück method. His method neither sacrifices tissue, impairs circulation nor is productive of much hemorrhage; consequently, there is slight shock; furthermore, the absolute control of pain by local anesthesia brings the procedure to a class of individuals that are subject to no other plan of treatment.

The method as carried out by Sauerbrück consists in resecting from the back ribs, from the first to eleventh. About two inches from the spine of the vertebra a line of anesthesia in the skin is established, begun with the first rib and carried well down to the twelfth. Subcutaneous anesthesia is maintained in the muscles of the back by deep injection. By directing the needle into the intercostal spaces, all the dorsal nerves are completely anesthetized both proximally and distally. Incision is made through the skin from the first to the eleventh ribs down through the muscles, including the trapezius, rhomboideus major and rhomboideus minor. Part of the latissimus dorsi and the serratus, if it is heavy, are divided. Here we rest and an additional amount of anesthetic is injected into the intercostal spaces, both proximal and distal, during which time the assistants are caring for hemorrhage by ligation. The ribs are then resected. They are really lifted from the periosteum and pleura leaving the wall intact. In some cases, particularly where the chest wall is contracted and the ribs are stacked one on the other, it is easier to resect each rib as soon as denuded of periosteum. Great care should be used not to puncture the pleura in the tuberculous cases and in empyema to stay clear of fistulous openings. In the treatment of chronic empyema, drainage at the bottom of

the bucket must be established, and if the opening in the pleura has been placed posteriorly in the primary operation, one must be made low in the axillary line and the posterior opening permitted to heal before radical measures are undertaken. Should the fistulous tracts be invaded, or the tuberculous lung or pleura gotten into, we may expect serious infection and a stormy time in a large number of cases. Even in the most careful resection the infected lung and pleura may jeopardize our results, because of direct extension of infection from the diseased lung to the traumatized tissues overlying it in our field of operation. This danger is not nearly so great in empyema cases as in the tuberculous. Hemostasis completed, muscles are sutured with interrupted sutures, and skin in the same manner. A small perforated rubber tube is inserted under the muscles well up to the second rib and fixed in the lower angle of the wound. Anesthesia should be preceded by hyoscine and morphine one hour before the beginning of the operation. The position of the patient is best upright with the head leaning on a support, arms crossed in front of the chest. After the incision is completed the patient may be turned on his well side and the operation continued in the recumbent position. The amount of rib resected should be generous, increasing from above down. Good results depend upon this. In our later work we are going even further than Sauerbrück and results are more gratifying. In some cases posterior incision and resection do not produce a complete collapse. In such an event it is necessary to resect from the front, first, second, third, and sometimes the fourth ribs. Excision of the first rib is most difficult, but with complete local anesthesia and careful dissection it can be done. Rib resection completed, the tendons of the pectoralis major and minor are cut, the muscles packed well into the cavity, and the skin sutured. We are now advocating cutting the tendons of the pectoralis major and minor and making use of the muscles in the posterior operation. The tendons are severed by an assistant, and when the ribs are resected posteriorly, the tendons are grasped from behind and pulled under the scapula

and attached to the cut muscles on the vertebral side, the wound then being closed in the usual manner. We believe this addition to the Sauerbrück method will produce such complete collapse of the apex that the anterior incision with resection will seldom, if ever, be indicated. After care must not be forgotten. Until wounds are healed, the chest wall must be maintained in collapse by a snugly fitting bandage around the chest, aided by adhesive fixed to the sternum and vertebrae. We have devised a close fitting jacket made of ducking, which laces in front. A rubber bag made to conform to the chest is placed within the jacket on the collapsed side. The jacket is worn as soon as the wounds will permit. The additional apparatus adds much to the success of the Sauerbrück operation. The patient should have the very best postoperative treatment.

Surgery does for the tuberculous what it does in any other surgical lesion, namely, places the patient in an attitude to get well. Success is attained only by persistency, repeated operation and application of many methods. Primary mortality is close to twenty-five percent in our hands. In fact all patients do remarkably well who live to get out of the hospital. Only one patient has succumbed to tuberculosis after recovering from operation. He lived two and a half years after operation, having died only a few days ago. His medical adviser attributed his death to the patient's mistakes. One patient is now living in good health seven years after operation. One patient is in the hospital. More than twenty operations have been done.

Conclusions.

Extrapleural thoracoplastic operation is clearly indicated in the tuberculous lung, old empyema and, probably, bronchiectasis and spontaneous pneumothorax.

It is harmless intervention.

It produces complete collapse, thereby relieving expectoration, lessening hemorrhage and effecting subsidence of temperature, thus clinically benefiting a great number and curing a few.

DISCUSSION.

J. F. McConnell, Colorado Springs: It is particularly and peculiarly fitting, I think, that an internist should open the discussion on a surgical paper, because it is by that co-operation between the general practitioner and the surgeon that we shall be able to benefit the patient, and in these particular cases make the thoracic region the scene of greater accomplishments.

Dr. Shivers has well said that operative interference commences where nonoperative treatment fails. That is the keynote to the whole idea. To this patient I tried on three or four occasions to give artificial pneumothorax with nitrogen, and another physician in Colorado Springs, who is an expert in the work, also tried, and with complete failure.

The study of surgical procedures in pulmonary tuberculosis probably began about ten years ago when experimental work was first begun on dogs with the removal of a large portion of the lung. It was thought at the time something could be done in phthisis by the removal of a portion of the lung. It was found, however, there were circulatory and respiratory difficulties in the way which could not be overcome and which could not be successfully interpreted. We have in this extrathoracic procedure an extrathoracoplasty operative method of procedure which I think will lead to the saving of a large number of patients who otherwise would inevitably die.

A year or two ago I read in the *Journal of the American Medical Association* an editorial on cults, and in that editorial it was stated that an osteopath would not give his son diphtheria antitoxin for diphtheria. After the death of his son, the father, who was the editor of an osteopathic journal, wrote that he wondered if he had given his son the benefit of the knowledge of the generation in which he was living. This work Dr. Shivers is engaged in is going to benefit the generation in which he is living. He is operating on hopeless patients and in quite a respectable number of cases bringing about exceedingly good results.

As to the patient the doctor reported as having died in Texas, I saw that man. If there was a man doomed to death it was that particular individual. Artificial pneumothorax was impossible. Several of us tried it and everything else; cadaveric rest and other things were minutely carried out, and yet with the operative procedure of Sauerbrück, which had been worked out by Dr. Shivers, the man made a splendid recovery and was able to earn a hundred and seventy-five dollars a month for some years following the operation.

The whole history of this work is exceedingly interesting. In regard to bronchiectasis, I do not think the procedure is going to be of any great avail. I have had the opportunity of seeing two patients operated on who had the pleura stripped back and large quantities of gauze packed in there, even chronic artificial empyema being produced by the operative procedure, and yet other than a slight lessening of the total amount of expectoration there was no particular gain, so that I think in cases of bronchiectasis one cannot expect a great deal from the operation. But in these cases of hopeless unilateral pulmonary tuberculosis, where everything else has been tried and has failed, this procedure no doubt does offer a chance as is well shown in the patient before us.

Leonard Freeman, Denver: This operation of Sauerbrück, of which Dr. Shivers has shown us such a wonderful example, is deserving of very

careful attention. I once saw Dr. Sauerbrück do several of these operations. The patient was anesthetized before being brought into the operating room, and in a moment, before I was able to collect myself, the air was full of ribs; and a few moments afterwards, before I fairly realized the operation was begun, the ribs were on the floor, the skin sewed up, and the patient ready to be taken out of the operating room. I think I can say to you, never in my experience have I seen so rapid and so skillful an operation—and that was the judgment of all those who were present at the time. But that was Sauerbrück; in the hands of the average surgeon this operation is not apt to be so easy for either surgeon or patient.

Later, in Heidelberg, I saw a celebrated surgeon make a lamentable failure of the operation. The patient screamed and yelled and struggled so that the surgeon had to stop before he got entirely through. Such an operation, although it does cure many cases, should not be undertaken except by those who are experienced in the use of local anesthesia and in chest operations. These operations will cure certain cases; they will not cure the very bad cases, although the addition of the rubber inflating-bag is an improvement and helps to collapse the side of the chest. Many years ago I accomplished the same purpose by using a hernia truss; a spring truss, which got its point of leverage on the spine or elsewhere, thus avoiding the placing of a jacket clear around the patient's body. The bad cases and extensive empyemas will not yield to this sort of treatment because the collapse is not great enough. In such cases sometimes, perhaps, a Schede should be done, but that is a very mutilating operation and is associated with all the dangers of infection, shock and long continued suppuration.

I have been doing for some time, in these bad empyema cases, an operation which belongs to a certain extent to me, but which I have no doubt has been done by others. A horseshoe incision is made from the front of the chest high up near the sternum clear round to the back near the spine and going down well upon the side, avoiding if possible any sinus that may be present. A skin flap is turned up, and then the corner of the scapula liberated from the muscles which hold it down, so that the scapula can be widely elevated. By splitting and retracting the chest muscles, the ribs may be extensively resected, from near the sternum to near the spine and from the second rib to the lower border of the chest. Portions of the larger muscles may be divided and so packed in as to gain additional pressure. Such a procedure is less dangerous than a mutilating Schede operation, and often as effective.

Let me mention two or three other things Dr. Sauerbrück does. He not only collapses the side of the chest, but he sometimes resects the phrenic nerve in the neck on that side, thus paralyzing the diaphragm on that side and causing it to rise and help obliterate the cavity. He also sometimes separates the pleura from the adjacent tissues and takes large bunches of fat from the thigh or buttocks and packs them in so as to cause pressure and take the place of the rubber bag. I should much prefer Dr. Shivers' method. There are some surgeons who use large masses of paraffin for this purpose, and others who reduce the resected ribs to small pieces and put them in again so as to make pressure on the cavity.

I wish to compliment Dr. Shivers on his brilliant result as shown in this case.

Dr. Shivers (closing): I wish to thank Dr.

Freeman for all he has said. I can heartily concur with him in what he has said relative to the Schede operation. In the case I reported, as the lung collapsed one medical man that morning, while watching the operation, remarked, "This must be a cave of the winds." It looks that way when you do it. The Schede operation is a mutilating operation and carries with it a higher mortality, and as Dr. Freeman has said, it is a very hazardous operation of itself.

We are operating on the very worst cases we can get in this manner. The last two operations were done in the last nine or ten weeks on patients who were in such a condition that it almost seemed unwise to do anything. Different medical men saw the cases and hesitated, but the patients decided to take the operation. Through the suggestion of one of our local men the operation was done in two stages, and I am satisfied we brought two patients through who would have succumbed to the single operation.

As to the operation itself, we go down and take the lower five ribs and give the patient two or three weeks rest, and, as a rule, the temperature drops down with that much collapse. He is able to feed himself and gets stronger. He is carried back and we take either four or five ribs according to the number necessary. I believe this one proposition will put us where anybody can do the operation. As Dr. Freeman has said, local anesthesia must be used in operating on these cases, but by dividing the operation into two stages, you can have two operations of short duration. You can take out five ribs within forty minutes, and after you have done a few operations you can do the whole operation in forty minutes. I have never seen Sauerbrück operate, but I am told he is a wizard, and nobody can go in and take away the ribs as he does. By doing the operation in two stages and in dealing with a class of patients who have been in bed you cut down expectoration almost to nothing, you reduce the temperature, and some of them are able to work. The man on whom I operated six years ago has been working for five years. He has not lost any time since. He is a strong man. The first Sauerbrück operation was done about three and a half years ago, and the man is still comparatively well. I should not say absolutely well, but he goes back to Ohio and he experiences no unpleasantness. As our experience increases and we do more operations, the better will be the results.

A BRIEF STUDY OF INFLUENZA FOR TWO MONTHS AT THE DENVER COUNTY HOSPITAL*

HENRY SEWALL, M.D., VISITING PHYSICIAN.

With the Collaboration of J. R. Hurley, Resident Physician, Morris Katzman, Pathologist, and Signa Freek, Superintendent of Nurses.

We are in the throes of a visitation that should, at least, be good for our souls. For nigh two decades our well-founded satisfaction over the subjugation or increasing control of important diseases has merged into

something like braggadocio which has exalted our abilities to an eminence lacking a sure foundation. Now comes a new Imp of Infection and under the shock attacks of his marshalled hosts our fortresses have crumbled, our strategy and our tactics have alike been futile and none can safely predict the extent of our future disaster. I venture to believe that any dogmatic general statement at this day about the nature, treatment or prevention of influenza is but an expression of ignorance. Conservative truth is probably best expressed in the words recently attributed to W. H. Park of the New York Health Department, that influenza is an infection due to a germ or germs of unknown nature.

As regards an invasion of disease, the medical profession bears to the community much the relation of a standing army. As in the recent great war, defense and attack are not limited to traditional lines but must be coordinated with new and terrible means of destruction. National existence depended on the ability to invent a mode of defense for every strange assault and to counter-attack with magnified demoniac methods. If the war has taught us anything as to the requisites for success in strife, it is that universal organization and coordination of individual knowledge, talents and energy are the fundamental necessity.

If all this is true, will not society sooner or later call upon the medical profession for an accounting of its stewardship? What have we done as a body to understand, to prevent, to treat influenza? Have we not been content to pursue our individual lines of thought and action, relegating to our official health department, which we damn if they do and damn if they don't, every effort towards organized activity? There can be no doubt that such supineness of coordination in national affairs would long since have seen the Hun dominating the world.

It has been said that there is something in the misfortunes of our friends which is not disagreeable to us; I venture to add that the humiliation of our enemies is as the odor of frankincense.

Is it not a glorious attribute of war by which individual selfishness is suppressed

*Read before the Medical Society of the City
December 17, 1918.

and every human power is directed to the single aim of the general good? But must our race continue to depend upon this drastic stimulus for the preservation of the nobler traits of character and principles of action so long familiar in the golden rule? If you have pardoned this discursion you may have patience to consider whether we, the County Medical Society, have done our full duty to our patients and to society when we fail to organize our forces against influenza. Such organization must, at the outset, be directed to the collection and sifting of facts which may conveniently be classified under four heads:

1. Epidemiology, which may be broadened to include the evidences as to the mode of transmission of infection by personal contact, through discharged droplets, by fomites, through the air; the influence of dirt; the individual resistance as affected by fatigue, ventilation, exposure to weather; evidence as to the channels of inoculation; the protective value of masks and, finally, the protective value of specific vaccination.

2. For the practical physician it is of the first importance that there should be a clear summary of the clinical history and symptoms and signs of the disease; the clinical course and march of signs and symptoms in all varieties of cases.

3. We should have a first hand knowledge of the clinical pathology; the relations of blood oxidation, coagulation, circulation, cardiac and respiratory functions, and edema of the lungs; pathological anatomy as illustrated in autopsies.

4. Finally, we should put direction and system in that joy ground of the incompetent, the field of medical treatment.

What, for example, is the value of early rest and care in the clinical course of the disease; what should be the conditions of aeration and ventilation? What is the value of hydrotherapy? Food and feeding intervals? What is the value of artificial stimulation, digitalis, strychnine, alcohol, etc.? What value have modes of specific treatment (a) with vaccines; (b) by the transfusion of immune serums or whole blood?

Such is a brief categorical summary of data which every practising physician must

deal with, and it is for him to use them for enlightenment or perversely close his mind against their suggestions. Can anyone doubt that each of us would be richer in capacity for good had the membership of this Society definitely adopted a plan of campaign along the lines indicated, and by frequent conferences imparted to one another the facts, summaries and conclusions as they developed in the daily work?

Impelled by some such considerations, it has seemed to me worth while to record a few data from an all too imperfect study of influenza in the persons of cases entering the hospital of the City and County of Denver during my recent term of service which included the period in which the epidemic began, the first week in October, to December 1, 1918.

As to the collection of the data, a brief effort showed that a detailed study of the clinical charts was impossible in the time available to me and for the figures to be presented I am wholly indebted to the devoted cooperation of Superintendent Collins and his staff at the hospital.

A prefatory word should be uttered as to the class of cases distinguishing the service at the county hospital. We all know that in every epidemic of serious disease certain cases from the outset will defy all remedial efforts of the physician while another, larger or smaller, group gets well in spite of anything the doctor does or leaves undone. It would be easy to prove that, by and large, the cases entering the county hospital belonged to the advanced or very severe phases of infection. A certain proportion of the sick were moribund when brought to the hospital, a fair number died within twenty-four hours of entrance. All these are included in the mortality rate. No signs of the epidemic appeared upon the hospital records until the first week in October. In the week ending Saturday, October 5, nine cases diagnosed as pneumonia were admitted, and subsequent admissions showed that they were indeed the advance guard of the influenza victims.

It is proper that I should pause here a moment in tribute to the efficiency of the hospital administration which, greatly crippled

pled in its executive force, met the emergency immediately, resolutely and without vacillation. The two brightest wards of the hospital, one for men, the other for women, were cleared of their ordinary occupants who were accommodated elsewhere in the institution. These wards, well adapted for isolation, were relegated solely to the care of influenza cases. As soon as cases of the disease appeared among the nurses, the commodious children's ward on the southeast side of the hospital was emptied and devoted to the care of sick nurses. My records cover nine weeks ending November 30. I was personally cognizant of but one half of the cases in the service, the other half being under care of Dr. Arndt, assisted by Dr. Barney.

The total number of cases attributed to influenza admitted during this period was five hundred and thirty-five, with a proportion of about three males to two females. The number of deaths recorded during the same time was one hundred and seventy-one, giving a mortality rate of slightly less than thirty-two percent. A consideration of the morbidity and mortality reports from the army camps and cantonments indicates that this was the prevailing mortality for the same class of cases. A good deal of stress is laid in statistics on the mortality rates as influenced by the supervention of what is called pneumonia. I will try to show later that the diagnosis of the pneumonic condition is often a matter of the utmost difficulty and will hold that that condition is probably a resultant of the influenzal infection and only a link in the chain of pathologic factors. Of the five hundred and thirty-five cases of influenza, one hundred and forty-four are noted as presenting pneumonia. The death rate among the males was about thirty-eight percent of admissions and the absolute number of deaths was forty-two in excess of the number said to have pneumonia. The death rate among the females was about twenty-two percent of admissions and the excess of cases of pneumonia over deaths was fifteen. That is, supposing the mortality to be limited to pneumonia patients, seventy-seven percent of women with this condition died.

The weekly admissions for the nine weeks throw doubt upon the validity of the newspaper reports of the fluctuations in the prevalence of the disease.

Beginning with the week ending October 5, the weekly admissions were 9, 74, 77, 48, 38, 70, 60, 85, 74. The conditions are too complex to justify any detailed conclusions from this sequence of figures; there is evidence of a sudden outburst of the disease from small beginnings; a fact which has been commented on from many widely separated areas of infection throughout the country. The certain conclusion may be reached that, up to December 1, at least, there has been no material abatement from the acme of the disease prevalence, if it be granted that hospital admissions are an index of that prevalence. Of the one hundred and seventy-one deaths recorded, autopsies were made in but eight cases. This humiliating admission of the waste of material for scientific instruction proves, if proof were needed, that no business administration, however competent, is alone sufficient to develop the full good of a hospital; but that university affiliation by which scientific ideals may be realized should control the disposition of patients before and after death in conformity with the broad dictates of humanity. It is now widely known that the pathological anatomy of influenza and its common lethal sequels contributes eerie data to the anatomical results of disease. Our pathologist has summarized the gross changes found by him in the respiratory viscera as follows: "The cases of influenza that come to autopsy nearly always present red, airless areas which, on section, sink in water. These areas may be small, variously distributed, or most often involve the lower lobe of one or both lungs. The pleura is somewhat reddened over these areas. Fibrinous pleurisy is a rare occurrence; most often there is a bloody serous effusion, with or without pus, in the pleural cavities. The red fluid under the microscope may be composed of an amorphous red suspension in a tinged serum. The simple serous effusion may be sterile and the purulent exudate show short chains of pneumococci or streptococci. The lung changes may consist in the presence of

the reddened-bloody areas or an additional pronounced degree of edema. Various degrees of density of consolidation characterize the red areas or they may be transformed to grey pus-containing foci. In ordinary terminology the areas of consolidation usually present the distribution and characters known in broncho-pneumonia; though the macroscopic appearance of lobar pneumonia is also found, both forms occurring at times in the same subject."

It is a relief to turn from the gloomy records of the medical wards to those of the nurses who fell ill with the disease. Out of a total of fifty-three nurses and probationers in the hospital, twenty-seven contracted influenza. A considerable proportion of these, possibly twenty-five or thirty percent, developed pneumonia. A few were exceedingly ill but all made complete recoveries. The element of contagion in the incidence of the disease is illustrated by the fact that seventeen of the sick nurses were employed on the two influenza wards while ten of the sick came from service on the other four wards of the hospital.

Gauze masks were worn more or less faithfully early in the epidemic by nurses attending influenza cases. The morbidity of nurses was not apparent until the week ending October 12. The weekly number of cases was 2, 6, 5, 5, 0, 6, 3, 0. The marked contrast between the mortality rates of patients and nurses calls for enquiry. The explanation that seems most satisfactory lies in the period elapsing between the onset of the disease and the beginning of complete bed rest, not to mention medical care, in the two sets of cases.

Most of the ward cases had been sick for a week or more before coming to the hospital, whereas nurses rarely failed to enter the sick list before the second or, at most, third day of symptoms. The principle of early rest is of fundamental importance and has not been sufficiently emphasized in advice to the public.

It would be difficult to certify the existence of influenzal infection as a purely sporadic disease. No certain sign can be pointed out which demonstrates its existence. Like syphilis, it imitates many condi-

tions but is identical with none. It would be worth while to elaborate a complete clinical picture of influenza, but I will spare you such a futile effort. Nevertheless there are a few features of the disease which have a rather particular interest in view of the severity of the cases under consideration. The great majority of the patients were between twenty and forty years of age. Physical robustness was the outstanding rule. The splendid bodies of the sick men seemed but to invite the touch of the destroyer.

Sufferers from pulmonary tuberculosis possibly enjoy a relative immunity from the infection—less than a dozen with this complication were encountered among our patients. They seemed to bear the acute disease better than would have been expected, though the ultimate results may prove disastrous. Four or five women patients were pregnant, usually at about the fifth month. They, for the most part, bore the disease well, contrary to reports from an extensive Chicago clinic. I was impressed with the large proportion of cases of mitral stenosis among the women, none among the men, in my service. I must have encountered a dozen cases of various degrees of severity. Strange to say the lesion did not usually determine a fatal issue.

In view of the relative immunity against tuberculosis which seems to be conferred by mitral stenosis, it is interesting to note that pulmonary congestion would seem rather to favor the implantation of the virus of influenza. That is, while tuberculosis has a predilection for the anemic lung, influenza rather seeks the congested organ.

While perhaps the most valuable estimate of the condition of an influenza patient is founded on physical examination of the chest, it is surprising what a degree of toxemia may exist, with a temperature around 104°, with no distinctive pulmonary signs until several days have elapsed.

In the early days of the epidemic, I was struck with the frequency with which the spleen could be palpated. There was often, also, a macular pinkish eruption, disappearing on pressure, somewhat resembling the rose spots of typhoid, three fairly certain cases of which disease, by the way, were

included in my series, only one recovering.

My physical examinations were usually made with the patient recumbent.

The pulmonary changes showed a marked predilection for the lower lobes, most prominently from the angle of the scapula downward. The morbid signs were usually bilateral, though more pronounced on the side, rather strikingly the left more than the right. When the patient lay upon his side, I was much impressed with the uniform percussion dulness, often intensified to flatness, which commonly characterized the base of the uppermost lung and reached from the backbone as high as the angle of the scapula and forwards to about the anterior axillary line. For some time I thought I was dealing with a series of lobar pneumonias, but was set right by post mortem observation. A curious fact was observed, namely, that the percussion flatness of the uppermost lung changed to a dull tympany or even skodaic resonance when the patient was turned to his other side so that the formerly flat lung came underneath. Now, skodaic tympany results from compression of air within the lung and such compression would obviously be more likely to occur in the dependent rather than the superior lung. It has seemed to me that this relation of signs should be valuable in distinguishing between a massive, airless, lobar consolidation and an extensive lobular consolidation in which air is always included, though percussion may reveal a diffuse dulness over the surface. Percussion dulness distinctly antedates consolidation of the lung, though it becomes intensified when this change occurs. One of the most characteristic pulmonary findings in influenza, occurring even before any distinct signs of consolidation, is apprehension by auscultation of showers of fine crepitant râles which seem near the ear with inspiration. These I have attributed to edema, since they diminish by gravity in the superior lung. I have spent many hours trying to determine the exact sequence of auscultatory signs which mark the transformation of a congested but functioning lung into one in which tissue condensations appear and gradually develop into more or less massive consolidations.

While there is no difficulty in recognizing

the presence of comparatively large masses of airless tissue and diagnosing a pneumonic lung, it has become obvious to me that many small foci of consolidation may exist, producing bronchopneumonia, which offer no distinctive signs. It is my personal conclusion, therefore, that while the clinical diagnosis of pneumonia in influenza is probably usually correct, clinical exclusion of the pneumonic process is next to impossible.

But the practical difficulties of physical diagnosis reach their climax when the examiner tries to make the discrimination, usually very easy, between pulmonary consolidation and pleural effusion. Given a chest with a flat percussion note, feeble tactile fremitus and diminished voice and breath sounds, ordinarily one would confidently expect the aspirator to withdraw fluid from the chest. But in influenza the insertion of a needle in such a case may prove a dry tap. On the other hand, a flat percussion note over a chest which on auscultation shows superficial respiratory crepitation would seem to indicate consolidation, but in such a case I have withdrawn a quart or more of fluid. On several occasions the inserted needle has not struck fluid until nearly withdrawn from the interior of the chest. It would be possible to explain these findings from the data of pathological anatomy, but it must be granted that they depart from ordinary clinical experience.

In conclusion, one of the most striking and important of the clinical aspects of influenza is the unexpectedness of its changes for worse. A number of times I have left patients apparently well, holding their own, and on my visit next morning found them beyond my power to aid. The most obvious prognostic sign of this condition is probably cyanosis.

Withal, considering the seriousness of the disorder and the range of vital functions it involves, it may be said to be on the whole a Happy Disease. Rarely do we find, as we do here, patients with a temperature of 103°, expressing a sense of well being and asking for more to eat; or even when within a few hours of the end replying to question, that they "feel all right".

BIRTH REGISTRATION IN COLORADO.***J. W. MORGAN, M.D., DENVER.**

"In the future the training of the medical man must be developed largely with a view to his broader relations to the public. His proper function must be to prevent, rather than to cure disease." (Prof. V. C. Vaughan.)

Before the passage of the vital statistics act in 1907, the doctors, a few of them, reported their births to the various county clerks. This was evidently not satisfactory, so the present act was passed, which by the way is standard, in hope no doubt that the state might be up to date in health measures, especially in the bookkeeping department.

There is a notice in the copies of the act published for circulation among the doctors, that reads as follows:

"To physicians, midwives and undertakers:

"It is requested that all parties affected by the provisions of this act will thoroughly acquaint themselves with those sections in any way affecting them, as it is the intention of the State Board of Health to rigidly enforce the law regarding the reports of birth and deaths.

"Hugh L. Taylor, State Registrar."

That was a good start, and no doubt an honest effort was made to carry out the provisions of the law, but if we judge by the figures of 1917, ten years afterwards, it does not give us much to which we can point with pride; rather should we view with alarm the prospect of the federal government taking over the vital statistics of all the states.

I am not going to give you a lot of figures to prove the statement that we are far behind the states that the federal government recognizes as having reliable statistics, but the fact is we are about 30 percent short of a full registration, and as the government requires ninety percent, you can

see how far we are in the rear, and of this we as medical men and good citizens should be heartily ashamed.

In August, 1917, the "Health Bulletin" of North Carolina gave a list of reasons for birth registration, under the caption, "Why a Birth Certificate?", as follows:

- (1) To establish identity.
- (2) To prove legitimacy.
- (3) To show when the child has the right to enter school.
- (4) To show when the child has the right to seek employment under the child labor law.
- (5) To establish the right to inherit property.
- (6) To establish the liability to road duty.
- (7) To establish the right to vote.
- (8) To qualify to hold title to, and to buy and sell, real estate.
- (9) To establish the right to hold public office.
- (10) To prove the age at which the marriage contract may be entered into.
- (11) To comply with the law.

Another and most powerful reason, now very much in evidence, is the question of the draft. Is the individual of draft age? Frequently there is no way to establish the fact, and the slacker cannot be brought to justice.

There are some weak spots in the vital statistics act, to which I should like to call your attention.

The enforcement of the law is in the hands of the local registrar, who in a large number of cases is an undertaker. I asked one of them why he did not enforce the law and got this answer: "What do you take me for, a fool? I am an undertaker; think I would prosecute a doctor?"

In one of the largest towns in the southern part of the state I had made a copy of the hospital records and, compared with the records at the capital, it showed that one of the leading doctors of the town had thirteen cases of labor in ten months, and in not a single instance had he reported a birth. "Why not prosecute?" I asked the registrar. "That would cost me my job as city clerk", he replied. So in the appointment

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

of registrars I would suggest that men and women be selected with care, that they have courage, not be undertakers and not be afraid of a doctor.

Even when the doctor has gone through the motion of filling out the birth certificate, the name of the child is frequently omitted. Assistant Attorney General Bouck recently gave it as his opinion that a birth certificate to be of any legal value must have every blank filled, or a good and sufficient reason given for omissions.

Thirty-five percent of the certificates received at the office of the state registrar have no given name; then it is up to the registrar to send out a separate notice calling attention to the omission.

So important is the matter of birth registration, the Assistant Surgeon, John W. Trask, says that failure to report births should be classed as malpractice.

Bishop Tihen of this state has given us very valuable assistance in obtaining the birth records of children born in his church, by having the local priest fill out the certificate.

The recent move to save one hundred thousand babies in the United States this year has again called our attention to the vastness of the subject.

Here is an article which appeared in the local press of Denver the other day:

"Draft Eligibles Hunt Birth Records.

"Youths of eighteen to twenty-one who must register if the proposed draft changes become a law, may find their birth record, and again they may not. There was no penalty eighteen years ago for failure to file birth certificates, and physicians were often careless."

A writer in a recent number of the *Journal of the A. M. A.* says: "Complete registration of births and deaths is a goal which can be reached in a short time, if congress will enact a law placing the matter under federal control."

The importance of complete registration of births and deaths is apparent to all. The number of births in a locality and the number of deaths under one year of age must be known, or no accurate knowledge can be had of infant mortality—a most reliable in-

dex of the community well being. Other valuable health indexes are death rates for certain diseases, as typhoid fever, tuberculosis, etc.

So far, the registration of births and deaths has been under the control of the state and local authorities. In some parts of the country good registration laws have been enacted and are being well enforced, but in other sections but little has been done. The net result has been that only twenty-eight of the forty-eight states are now in the registration area for deaths, and only twenty states are in the registration area for births, areas where the registration laws are good and the registration is at least ninety percent complete.

To be sure, the conditions are improving each year and the states are realizing more and more the importance of complete registration of births and deaths, but if it be left to the states to enact and enforce legislation, it may be one hundred years before birth and death registration will be even approximately complete throughout the United States.

On the other hand, federal control would insure at once the uniform enforcement of registration throughout the country. It would not be necessary to change the good registration laws now existing in many of the states, nor to replace the competent registration officials throughout the country. With a federal law calling for the proper registration of births and deaths, providing penalties and empowering the Department of Commerce to prosecute when necessary, the existing registration machinery in the various states, if kept up to a federal standard, could be allowed to remain.

Inasmuch as the constitution provides that a representative must have attained the age of twenty-five, a senator the age of thirty and a president the age of thirty-five years, it is evident that congress has the power to enact legislation for the registration of births; also, since the selective draft laws call for men of specified ages and it has been difficult in some instances to prove the ages of these men, the enactment of proper laws for the registration of births and deaths is now a federal necessity.

Here is some appropriate doggerel from the North Dakota State Board of Health Bulletin:

We've registered our incomes, just as
the laws demand;
We've registered our autos, our houses
and our land;
We've registered our motor boats, at
Uncle Samuel's call,
Then why not register the most im-
portant thing of all?

We've registered our incomes, our
horses and our mules;
We've listed all our property accord-
ing to the rules;
We've counted all our country's wealth,
cattle, wheat and corn,
But no one knows how many future
citizens are born.

Now since we've inventoried 'most
every thing on earth,
Why don't we take some notice of a
human being's birth?
And while we count each side of beef
and every ton of coal,
Why don't we count that priceless
thing, a new-born human soul?
State Capitol.

DISCUSSION.

William H. Sharpley, Denver: Birth registra-
tion means the record in public archives of the
births of children. It is, of course, the first item
in vital statistics. While the importance of such
statistics has been recognized, the country as a
whole is still devoid of uniform and complete re-
cords of the births of its citizens. The govern-
ment is especially interested in the registration
of births in order to investigate infant mortality,
and to study infant mortality it is necessary to
know how many babies have been born and how
many have died before they were one year old.

There are no complete records for the United
States as a whole which show how many babies
are born and how many die year by year, but
a calculation based on census figures indicates
that in the ten-year period between the two
enumerations of the census, more than two mil-
lion five hundred thousand of the children born
in this country died before they reached the age
of one year. If none of these infant deaths were
preventable, there would be no stimulus for try-
ing to find a remedy, but we know that the num-
ber can be reduced. The birth record is a safe-
guard for the newly born child. It furnishes to
the health officer and the visiting nurse the name
and address of every baby, and the community is
thus enabled to send to the family in adverse cir-
cumstances instruction in hygiene and sanitation

which may save the life of the child. Birth regis-
tration is a protection for children at school and
at work, and in many states the child labor laws
and the compulsory educational laws are rigidly
enforced, and both rest on a basis of birth regis-
tration.

Birth registration also protects personal and
property rights, and the American consuls abroad
report numerous cases of loss of property or loss
of legal rights because of the impossibility of
establishing a birth record in this country for the
children of immigrants.

Until recent years, Colorado has been negligent
in reporting births, and it is the war that has
brought this question prominently before the peo-
ple, and on account of publicity during the past
four years more attention has been given to regis-
tration of births than ever before, but neglect in
the past has resulted in many hardships to inno-
cent persons.

At the present time, the majority of physicians
in Denver are reporting their births, and the prin-
cipal difficulty the health department has to en-
counter is obtaining birth reports from the foreign
population. I should judge that about fifteen
to twenty percent of births are not reported, the
most of them from the foreign element. In Den-
ver as well as other cities, a certain proportion of
foreigners do not employ either physicians or mid-
wives in confinement cases, the work being done
by relatives or friends of the family, and hence
it is impossible to get records. This same condi-
tion exists in all large cities.

The physician who is loyal to his profession
will promptly and accurately report all births,
deaths and reportable diseases which he attends.
This is a duty as much to his profession as to the
state whose law requires it. A practicing physi-
cian who does not loyally obey and fulfill the
laws of his state is not entitled to their protec-
tion. There have been various objections to re-
porting births, one of the most frequent being
that reports cannot be required without compen-
sation. There is no legal basis for such objec-
tion. Every person is under obligation to society,
and if he fails in performance of his public duty,
he is not entitled to protection by society. It
has always been recognized that a witness of fact
must give evidence when legally called. A phy-
sician is licensed by the state to practice his pro-
fession, and registration of births is one of the
things the state has by law asked of him in
return.

Checking birth reports is an important matter
which every health officer should look after. A
good method is to look up the birth records of
children who die under two years of age, and
then if no record is found of the birth, inquiry
should be made of the family to determine the
physician or midwife who attended. If they have
neglected their duties to the family and violated
the laws, they should be prosecuted.

Children's Year, the nation-wide drive to pro-
tect America's children and save one hundred
thousand babies, began on April 6. It was planned
by the federal Children's Bureau as a war emer-
gency measure, but Children's Year will not end
with the weighing and measuring test. Prompt
registration of births, which enables a public
health nurse or the health officer to reach im-
mediately the mothers and babies who need their
services, is one of the ways by which committees
can forward child welfare.

Ella A. Mead, Greeley: This subject of vital
statistics is one of fundamental importance, but
it does not seem to be of vital interest, judging

from the small number of members who have remained to hear the discussion.

I have been registrar of vital statistics in Weld county ever since Colorado adopted the method which we now have of reporting births, and I have observed a great many things which have interested me and which I think are of great importance to the public in general and ought to be of importance to the medical profession.

Contrary to the statement just made, physicians report their births in Weld county; I have found that those who are practicing in the country report much better than those who do the work in cities. Those who care for obstetric cases in the city of Greeley report almost none at all. The city clerk in Greeley has very scant records, whereas the county records are more complete. I have twenty-nine deputies throughout Weld county and we get reports from them all over the county. But there is one thing I especially want to call attention to, and that is, we have no regular system of filing. I do not know whether they have it or not in other counties. There are no filing books in the counties. The records are kept by registrars in all incorporated towns, and there is a separate registrar for all portions of the country outside the corporations, so that we have in every county about as many systems of files as there are towns in the county plus one for the county at large. In Weld county there is no filing system except the one for the county. I stirred up a hornet's nest in Greeley when I examined children for welfare work. When I entered the room I saw about fifty children; I went around the room and asked every mother if her child was registered. Most of them happened to be born in the city of Greeley, and they said they didn't know. I told them when they left to go downstairs to the city clerk's office. We were holding the examination upstairs in the city hall, and I asked the clerk whether those children were registered. I knew he had nothing except the open copies of the birth certificates without any files whatever, and he went through the whole thing to look up the records of these children. I have not heard from him since, although I told him I sent the mothers down to him.

I have had to wake up the city to get books to keep the records, to go back six years and find the births of children. In the county record we have a large file book which holds the index for each year and each letter in each year, and we can turn to the record of births and find the information we wish. I think it is very important to have a good system of keeping these records.

J. C. Chipman, Sterling: I did my work for two years and had no trouble in getting records. The state has divided the different places into registration districts. Logan County is District 145 and Sterling 146. The state furnishes me blank certificates bound in book form. I keep one of these books the same as I do for death certificates, one for each district. I have no trouble in locating every birth that has been recorded since 1910, because if it is in the county I take the District 145 record and find the registration.

There is one thing that makes it difficult sometimes to secure the data you desire, and that is, some doctors will report all the births they have had for six months. They begin at the short period, and if you go to them personally and ask them to report at the end of the month, and tell them that is all there is to it, in six months they will send in the reports when you have already copied them into the record. One man recently

reported five births, and they extended back to last June. There was one birth that occurred in June, 1917, that was reported during the month of August, 1918. It is some trouble to hunt that up because each blank is filed in rotation. One thing in the state that interferes with the correct registration of births that I have seen in the four years I have been overseeing this work is the doctor himself. I think a man who is employed in confinement cases ought to report the births, and when I say report them, he ought to fill in every item that there is on the certificate.

We have one doctor practicing medicine in Logan county who in every confinement he has attended within the last eighteen months has given the children the same name or put down that the child is unnamed. I have talked to that man, he is a friend of mine, and have told him that he should put down the name of the child. I think he is paid too much for what he does.

David A. Strickler, Denver: The one thing that appeals to me in this remarkable paper is that there is no means of compelling doctors to report their cases, and that the only means of compelling them to do so would be the federal authority. I know in trying to administer the Medical Practice Act our difficulty comes in getting county attorneys to act in their different counties on cases of men practicing medicine without a license because of the fear they may do something that the people of the community would not like. Dr. Morgan's statement with relation to the undertakers not being willing to offend the doctors and others appeals to me very strongly for the same reason. Some more forceful means of compulsion than the constituted county authorities should obtain, if statistics or birth reports are to be of value. I doubt whether anything short of federal authority will meet the requirement.

Dr. Morgan (closing): I think it would be a good idea for the federal government to impose, say, a thousand dollar fine on those who refuse to report births. If this were done, we would get a much more complete birth registration throughout the state. As it is, a great many physicians are indifferent in regard to registering births.

X-RAY TREATMENT FOR SUPERFICIAL MALIGNANCY. A NEW COOLIDGE TUBE TECHNIQUE.*

H. P. BRANDENBURG, M.D., DENVER.

Superficial malignancy (epithelioma) is one of the most common and important conditions which occur in the exposed parts of the body. It is rarely found in those parts of the body covered by the clothing and unexposed to the action of the sun, wind, irritative dust, etc. Men living in the open and exposed to the elements seem prone to be affected, many coming to my observation from the western slope and Wyoming, often stockmen who are in first class condition

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

otherwise and whose resistance apparently is good.

Constant irritation caused by dust in the eyes, especially alkali dust, I believe to be the causative factor in most of the cases involving the eyelids; also the glare of bright sunlight. These are the causes of the growths that appear in the younger and more robust individuals, usually between the ages of thirty and fifty years. In the aged only slight irritation combined with the lack of tone and impaired resistance, occasionally associated with trauma such as biting the lip or holding a rough pipe stem in the mouth, is a causative factor.

The first thing to be noticed in a beginning epithelioma is a small dry scab or scale which has persisted for some time; this drops off only to be replaced by another just like the first, or even a little larger; these are always dry and dark in color at the beginning, but later, after deep tissue destruction has set in and the scab is new, it may be soft and elevated, but only for a short time, for one of the characteristics is a dry scale. Any persistent scab on the skin in individuals at or past middle life which has persisted for three or four months without healing should be looked upon with suspicion, for it is usually the beginning of a malignant growth. These growths are often overlooked or passed by in their earlier stages and not until they have reached the second stage, or involvement of all layers of the skin with necrosis, are they recognized. The earlier diagnosis of the lesions before they reach this stage is quite important, although the cases which show considerable induration and loss of tissue can be successfully treated; the treatment, however, is much more prolonged and some scar tissue will be present after the lesion is entirely healed. The cases in which diagnosis is made early and the treatment is properly carried out heal without leaving even a trace of their former location, therefore it is most important that the diagnosis be made early so that the patient may be spared these scars which are prone to occur if the deeper layers of the skin are broken down before treatment is begun. The treatment given by the first operators consisted of daily ten minute ex-

posures with a gas tube ten inches from the skin, having a back-up of a six inch parallel spark and drawing one milliamperere of current. The treatments were continued until the skin began to show signs of dermatitis, which was usually after ten treatments, then the patient rested without treatment until the reaction had quieted down, then treatments were resumed. Three or four treatments a week were given until the pathological tissue disappeared and the wound healed with production of fibrous tissue. This was quite a satisfactory treatment, the difficulty being the personal equation of the patient. Individuals have different resistance to the x-ray, some requiring, in my experience, one-tenth as much as others to get the equivalent in skin reaction. If one of these has received ten daily doses by this method a severe dermatitis will result. This was the cause for so many cases of so-called x-ray burns which were constantly experienced by older operators, about every tenth patient getting too much x-ray for his own peculiar skin.

A later method consisted of treatments of five minutes each three times a week with a water-cooled tube backing up a six inch parallel spark with three milliamperes passing through the tube at a distance of ten inches; this method was much more satisfactory than the first and much safer because the interval between treatments gave opportunity for observing the skin reaction, which if it is to be severe, usually shows in two or three days. The difficulty of this method was the irregularity of the tube, as all gas tubes, even though well seasoned, vary upon heating during treatment, especially if used continuously. The action, or rather reaction is not so powerful as the same amount when delivered through the Coolidge tube.

The first few treatments with the Coolidge tube were the same in technique as with water-cooled tubes as above stated, the only difference being the kind of tube. The amount of x-ray was the same and was found to be entirely too much, for the reactions were unnecessarily severe and it was impossible to control the treatment to the nicety desired. Therefore after trying several different dosages the following was

adopted as routine treatment: The Coolidge tube is so regulated as to pass three milliamperes of current, backing up a five-inch parallel spark and the time of exposure is four minutes for all except those on the eyelids, lip and mucous membranes, when the time is cut from four to three minutes, the anode-skin distance being ten inches. The advantages of this method are first the ability to give exactly the same amount of x-ray to each individual and to continue to duplicate the dosage indefinitely; second, by allowing two days between treatments enough time intervenes that, should the patient be especially susceptible, the idiosyncrasy will be detected early; third, the stage of tissue stimulation is shorter and the process of destruction of the malignant growth is well under way after two or three treatments.

The x-ray is a destructive agent, and all normal tissue would be destroyed if sufficient x-ray were given; any pathological tissue, however, has a lower resistance to the x-ray than normal tissue, there being some middle ground. The correct amount of treatment is therefore just enough to destroy the malignant growth and cause some irritation, but not to the point of destruction of the normal tissue surrounding the growth. Small doses of x-ray cause stimulation, larger ones destruction, and if too much is given necrosis of the surrounding tissue will result. The cause for tissue destruction is the irritative action of the ray on the intima of the arteries exposed, so that endarteritis results, with cutting off of the blood supply, and the growth dies from lack of nutrition, also while this action is taking place the direct action or destruction of the individual cells of the malignant growth is progressing. After the degenerative process of the tumor mass has begun normal granulation tissue will be noticed around the border; this will gradually fill in, taking the place of the abnormal tissue until healing is complete. All this time treatment is continued until the site of the growth is filled in with fibrous tissue.

The number of treatments depends entirely upon the extent of involvement which is present when the patient presents himself for treatment; it ranges from ten to thirty.

Treatments are given twice or three times a week, usually three, until the patient's normal skin in the area adjacent to the epithelioma begins to show some sign of reaction. This reaction consists of a bronzing of the skin in dark skinned individuals and an erythema with considerable dryness in blonds. It is quite important that the patient be examined before each treatment is given, and that in good daylight, for the reactions are easily overlooked if the patient is viewed by artificial light. If reaction is excessive, treatment is postponed three to five days. After the normal skin begins to show the correct amount of reaction and the epithelioma becomes dry and covered with a thick scab or scale, the treatments are cut down to two a week, which are sufficient to keep the destructive action on the tumor continuous.

The results have been satisfactory and permanent. It is quite difficult to follow these cases after they have been discharged. However, many of them after two or three years are still reporting to me and show no sign of recurrence.

155 Metropolitan Building.

DISCUSSION.

William Senger, Pueblo: May I ask Dr. Brandenburg a question? Will you explain to us what the advantage of the x-ray is over the violet ray and radium?

Dr. Brandenburg (Closing): The x-ray is different entirely from the violet ray in that the x-ray is long, and the violet ray is short. With radium we have a still longer ray than the x-ray. The radium treatment, from what I have been able to read about it and from the little experimental work I have done with it, is satisfactory to a certain degree, but the difficulty with radium is the standardization of dosage. There is no method of telling how much radium to give. I have known and watched several cases of recurrent carcinoma that were treated by radium, and I followed some up with the x-ray treatment. The radium treatment is guesswork. You can put in so many milligrams of radium, say twenty or thirty, and leave that in for a short time, say overnight or for ten hours. Different individuals vary in the length of time they leave it in. Some necrosis may result, but how can we tell whether or not we destroy some of the normal tissue around the growth? We have no control in the dosage of radium. The advantage of this new x-ray technic is to have a definite, standardized dose, then I can tell you or some one else that so much is my dose. It is like giving a definite dose of a drug. It is simplified. There is no special difficulty about it only to find an adequate dosage which can be repeated, and which is like making out a prescription for a case. The violet ray and the soft x-ray exert a stimulating action on tissue

growth up to a certain point, and if much is used it will destroy the growth, but the tendency for the shorter ray is stimulation rather than destruction of any tissue. It is more of a stimulating treatment. There is one point I left out in my paper, and that was the method of filtration which we also use. In the use of the x-ray with the same treatments it is often necessary to interpose between the rays and the skin filters of different thicknesses for much superficial work. The filters are one half and one millimeter in thickness to cut out some of the softer rays and still continue pounding into the tissues with the moderate length rays which we use for this particular treatment. The rays are not especially high for superficial work.

News Notes

The following physicians have received honorable discharges from the U. S. army medical corps since the last issue of *Colorado Medicine*: W. H. Swan, Colorado Springs; J. H. Allen, J. C. Gorsuch, G. W. Holden, R. Lewis, Denver; J. A. Morehouse, Idaho Springs; M. J. Le Rossignol, Rifle; W. K. Hills, Colorado Springs; R. F. Sheldon, Denver; J. G. Stewart, Grover; J. H. McKnight, Haxtun; S. H. Bell, Montrose; F. M. Heller, Pueblo; L. W. Soland, Blanca; E. M. Marbourg, Colorado Springs; W. H. Hossler, H. S. Shafer, Denver; J. M. Braden, Lafayette; F. L. Washburn, Telluride; J. R. Epsey, Trinidad; J. W. Foley, Denver; P. B. Wallace, Eagle; W. F. Church, Greeley; C. H. Fisher, Walden; R. L. Gleason, Wellington; A. H. Peters, Colorado Springs; C. A. Powers, William Roberts, Denver; G. F. Ewing, Julesburg; A. R. Williamson, Pueblo; C. W. Presnall, Trinidad; W. G. Benewa, Fort Morgan; J. W. Ames, Edward F. Dean, Denver; J. B. Hartwell, Colorado Springs; Clinton Enos, S. Fosdick Jones, A. J. Markley, Denver; W. A. Kickland, D. O. Norton, Fort Collins; A. G. Taylor, Grand Junction; O. A. Grantham, Johnstown; R. W. Mendelson, La Junta; W. Lucas, T. A. Stoddard, Pueblo; A. J. Bender, C. R. Fuller, Salida; E. G. Condit, Silverton; W. J. LeRossignol, A. E. Smith, Rifle; W. K. Hills, Colorado Springs; R. F. Sheldon, Denver; F. P. H. Van Landarghem, Fleming; T. C. Taylor, Fort Collins; J. G. Stewart, Grover; J. H. McKnight, Haxtun; S. H. Bell, Montrose; F. M. Heller, Pueblo.

Captain H. R. McGraw arrived in Denver January 26 on a two weeks' furlough from U. S. general hospital No. 20, Prescott, Arizona, where he is chief of the surgical service.

Major H. S. Finney of Denver has been transferred from Fort Oglethorpe to Camp Bowie, Texas, base hospital.

Lieutenant L. H. Ruegnitz of Denver has been transferred from Fort Riley to Camp Grant.

Captain C. Gillaspie of Boulder has been transferred from Camp Travis to Fort Des Moines.

Lieutenant R. R. Taylor of Pueblo has been transferred from Camp Pike to the Rockefeller Institute, for instruction in the treatment of infected wounds.

Lieutenant G. L. Sharp of Colorado Springs has been transferred from Camp Sherman to Camp Gordon, base hospital.

At a meeting of the Northeast Colorado Medical Society held January 9, Dr. E. P. Hummel of Sterling was elected president, Dr. Cochran of Haxtun, vice-president, and Dr. N. Eugenia Barney, secretary-treasurer. Dr. J. H. Bush of Sterling was

elected delegate to the Colorado State Medical Society.

At the annual meeting of the staff of St. Joseph's hospital, Denver, Dr. J. F. Roe was elected president, Dr. W. S. Bagot, vice-president, and Dr. R. L. Charles, secretary.

The annual election of officers of the staff of St. Luke's hospital, Denver, resulted as follows: President, Dr. I. B. Perkins; first vice-president, Dr. J. E. Kinney; second vice-president, Dr. James Rae Arneill; secretary, Dr. Carl A. McLauthlin.

The new officers for the staff of Mercy hospital for the ensuing year are: Dr. H. L. Taylor, president; Dr. Harry C. Brown, secretary.

Dr. J. A. Philpott of Denver, in writing to *Colorado Medicine*, says: "I am in charge of the G. U. work here at Funston and while I appreciate the honor bestowed upon me, I would much prefer to turn it over to some one else and get home."

The friends of Col. J. W. Ames and Major Edward F. Dean, both formerly with Base Hospital No. 29, are glad to see them in Denver again, in civilian clothes, and ready to resume practice.

The following is quoted from a recent issue of Campaign Notes, published by the American Society for the Control of Cancer:

"Among the American surgeons returning to this country after service in France, it is a particular pleasure to welcome Major Charles A. Powers who has long been identified with the work of the Cancer Society in Colorado. Major Powers has for two and one-half years, with only brief absences on leave, served in the great hospital at Neuilly, known since it was taken over by the American Expeditionary Forces as American Red Cross Army Hospital No. 1. Now that the war is over, Dr. Powers has returned to civilian life, but as he does not plan to resume the active practice of his profession, he anticipates that he will have opportunity to undertake a more active part than ever in the work of the Society for the Control of Cancer."

Dr. Severance Burrage, who has been assigned by the United States public health service to work in cooperation with the National Tuberculosis Association, is now in Denver studying conditions among the indigent tuberculous and those employed in the various industries.

Death has claimed another member of the Colorado State Medical Society in Dr. Erlo Kennedy, secretary of the state board of health. The cause of death was pneumonia, following influenza.

The marriage of Dr. C. A. Bundsen of Denver to Miss Eva Sellar occurred on February 3, 1919.

The new officers of the Fremont County Medical Society are: Dr. E. C. Webb, president; Dr. R. C. Adkinson, vice president; Dr. V. A. Hutton, secretary-treasurer.

The Chaffee County Medical Society elected the following officers for the present year: Dr. Finla A. McClure, president; Dr. F. A. Jackson, vice president; Dr. G. W. Larimer, secretary-treasurer.

A letter recently received from Captain R. G. Packard, and addressed from Perigueux, France, contains the following:

"After my last letter to you, I soon returned to my own hospital in Bordeaux. We began getting our patients there in August and our numbers constantly increased until in November at our high mark we registered over 4,700 ranging all the way from practically cured convalescents to terrible compound fractures . . . To attend the Red Cross meetings just before Thanksgiving, my room-mate and I were able to get orders to

spend four days in Paris. . . . Though we were there too late for the air raids, etc., yet we saw how everything had been protected from them; Napoleon's tomb covered deep by dirt and sandbags, the Arc de Triomphe likewise protected on all sides. La Place de la Concorde had on display hundreds of captured aeroplanes and machine guns. . . . You see an officer cannot take his leave in Paris but can 'if necessary' include it in his itinerary."

Captain F. R. Spencer of Boulder, writing from Camp Lewis, says: "Levy, Monaghan and I are all enjoying our work here, but are anxious to get back to civil life. Levy has made a remarkably good chief and is universally liked throughout the camp. . . . Levy and Monaghan join in sending best regards to all the men."

The next annual congress on Medical Education and Licensure, participated in by the Council on Medical Education of the American Medical Association, the Federation of State Medical Boards of the United States, and the Association of American Medical Colleges, will be held at the La Salle Hotel, Chicago, Monday and Tuesday, March 3 and 4, 1919.

In justice to the Chinaman whose English was quoted in the January issue of Colorado Medicine, we reproduce the following sample of the spelling of an American candidate for the position of stenographer in a doctor's office:

It remains to be seen weather a policy of concillation is still possible, and if it will prove to be successful. The obstickles to reaching any agreement look almost insuperable. The Balcufist Leaders are unwilling to negotiate, but will abandand aggressive propergranda.

The offect of the political change will profoundly effect the ecomick life.

Pueblo News.

Capt. T. A. Stoddard has returned to Pueblo from Camp Logan, Houston, Texas, and resumed his practice.

Lieutenant F. M. Heller has returned from Hoboken, N. J.

Capt. Wilbur Lucas has returned from Fort Riley.

Many interesting letters have been received from Lieutenant W. T. Bronson, who is with the A. E. F. in France.

Lieutenant Colonel Hubert Work has returned from Washington, where he has been connected with Provost Marshall General Crowder.

Word has been received of the promotion to captaincies of Lieutenants Leon Block and H. T. Low, who are with the A. E. F. in France.

Captain M. J. Keeney, who is stationed at the government general hospital in Aurora, spent a few days in Pueblo.

The many friends of Dr. C. W. Maynard will be pleased to learn that he has about fully recovered from a severe attack of Spanish influenza.

The engagement of Dr. Wm. Senger to Miss Knott has been announced. The wedding is planned for an early date.

La Junta News.

Dr. W. M. Moore of La Junta, who has been seriously ill with a gastric ulcer, is now at Orlands, Florida, where he contemplates spending the winter.

Dr. F. Finney of La Junta has given up general practice but has retained his post at the A. T. and S. F. Hospital and will also accept consultation work.

Dr. A. L. Stubbs of La Junta has been honor-

ably discharged from the service and has resumed practice.

Dr. H. E. Hall of La Junta, now in France, was expected home early in February.

Several cases of smallpox have developed in La Junta.

Drs. E. G. Edwards and R. G. Hersom of La Junta are spending the month of February in Chicago doing postgraduate work.

Dr. A. R. Cologne of Topeka has been added to the A. T. and S. F. Hospital staff at La Junta.

Drs. L. E. Likes and C. T. Knuckey of Lamar are resuming their practice after an absence of several months in the service.

New and Nonofficial Remedies.—During January the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion with New and Nonofficial Remedies:

Dermatological Research Laboratories:

Neoarsenobenzol.

Guiseppa W. Guidi: Ittiolo.

Merck and Co.: Digitan; Digitan Tablets, 1½ grains; Quinine Ethyl Carbonate-Merck.

Monsanto Chemical Works: Chloramine-T
Monsanto.

Medical Societies

CITY AND COUNTY OF DENVER.

The annual business meeting of the **Medical Society of the City and County of Denver** was held January 7, 1919. President Moleen was in the chair.

The following were elected to membership in the society: Drs. Erlo Elsten Kennedy, Lewis I. Miller and Edwin William Perrott, Jr.

Dr. R. G. Smith read the secretary's report, which was adopted. The society accepted the treasurer's report which was read by Dr. F. P. Gengenbach.

Dr. Melville Black gave the report of the trustees in which he stated that since about seventy-five of the members would be exempt from dues this coming year because of service in the army, the trustees did not see how it would be possible to go through the year on the present income. Some provision should be made to meet this emergency. They recommended either amending the by-laws to allow the annual dues to be raised to twelve dollars, or increasing the endowment fund. These plans were discussed by Drs. Henry Sewall, G. W. Miel and A. J. Markley. Dr. Sewall moved that the chair appoint a committee of five to consider raising funds as recommended by the board of trustees. The following committee was appointed: Drs. Henry Sewall, S. B. Childs, A. J. Markley, Melville Black and A. S. Taussig.

Dr. H. G. Wetherill, chairman of the committee for the selection of an automobile emblem, gave a report of the work of the committee, which was approved, and the committee was continued.

Dr. G. W. Blickensderfer submitted the report of the board of censors, which was approved, and Dr. A. J. Markley gave the librarian's report, which was accepted. Dr. G. W. Miel spoke for the committee on pharmacal relations.

President Moleen then gave an excellent address upon heredity. By resolution of the society, the address will be published in Colorado Medicine.

The following officers were elected for the ensuing year: Dr. Edward Jackson, president; Dr.

George F. Libby, vice-president; Dr. Minnie C. T. Love, secretary; Dr. F. P. Gengenbach, treasurer; Dr. W. A. Jayne, trustee; Dr. L. J. Weldon, censor.

The delegates and alternates were elected by ballot, Dr. Arndt, Dr. Crisp and Dr. Cooper acting as tellers. The delegates are as follows: Drs. G. A. Moleen, A. S. Taussig, H. G. Wetherill, W. H. Crisp, C. S. Elder, Melville Black, G. P. Lingenfelter and S. B. Childs. The alternates are: Drs. E. F. Dean, H. P. Brandenburg, G. W. Miel, M. R. Root, C. F. Hegner, H. T. Pershing, Mary R. Stratton and I. L. Mortimer.

The meeting closed with a vote of thanks to the retiring officers. MARY R. STRATTON,
Reporter.

The regular meeting of the **Medical Society of the City and County of Denver** convened Tuesday evening, January 21, 1919, with the retiring president, Dr. Moleen, in the chair. Dr. Moleen introduced the president-elect, Dr. Edward Jackson.

The society adopted some resolutions which had been prepared by Dr. G. A. Moleen for the legislature, recommending the building of a psychopathic hospital.

The scientific program was a symposium on the experiences in the present epidemic of influenza, which was opened by Dr. A. S. Taussig. He spoke of the different characteristics of respiratory diseases of the epidemic of last spring, beginning in April, and our present epidemic which began in August. The one in April affected principally the serous membranes and that in August the mucous membranes. These epidemics he considered a multiple infection which had some relation to the gathering together of large bodies of men. He thought the epidemic had been looked upon too lightly and handled too carelessly. He brought forward the fact that the hospitals were inadequate to handle the situation and he thought the hospitals should arrange some way in which to add to their capacity in order to be able to meet an emergency, should one ever arise again. If the emergency hospitals had been started sooner in the present epidemic, many cases might have been saved.

Dr. G. M. Blickensderfer said that with children the principal symptoms were fever and cough. In most cases, there were no physical signs except a redness of the throat. During the first part of the epidemic the children were not affected, later on many took the disease, but the mortality rate was low. Some had long continued temperatures which he thought were due to low grade infections. He considered there was justification for the use of the vaccines, as they seemed a protection from pulmonary complications.

Dr. C. E. Tennant thought the epidemic to be due to a multiple infection, and the way to combat the disease is to establish immunity, which he thinks can be done with vaccine. He gave seven thousand five hundred inoculations to two thousand and five hundred individuals. Among these there occurred twenty-six cases of influenza with three deaths, two of which had influenza in twenty-four or forty-eight hours after the inoculation, before time for immunity. The Great Western Sugar Company had one thousand eight hundred and forty of its employes given the vaccine, making about four thousand six hundred inoculations. Prior to these inoculations they had had three hundred and fifty cases of influenza; since the inoculations they have had seventeen cases with two deaths.

Dr. F. H. Cary next recounted his experience with pregnant women who contracted the

disease. He had fifteen or sixteen cases and spoke of the general fatality. He also called attention to the tendency toward uterine hemorrhage.

Dr. Tracy R. Love thought that the germs in this epidemic of influenza were not different from those in former epidemics, there being only an increase in virulence. He spoke of the variation in virulence in germs at different periods. He thought the chief cause of the extreme cyanosis was the action of the toxins upon the hemoglobin of the blood. His treatment consisted in elimination, aspirin or salicylates, opium for the cough, and digitalis, camphor and strychnine for stimulation.

The oto-laryngologists were represented by Dr. C. E. Cooper, who spoke of the few complications along his line of work arising from the present epidemic of influenza. He had a few interesting cases in his own practice, one of which was a bloody infiltration of the larynx. He spoke of otitis media being common, but suppuration was not common, therefore there were no mastoid abscesses. Hemorrhages from the nose were common and, in some cases, from the larynx.

Dr. F. C. Buchtel had operated upon nine cases with fluid in the chest, but the subject he talked upon which was of great interest was his work of transfusion. At first he used any blood he could get, later he used blood from a donor who had just recovered. During the first part of the time he used whole blood, later he used serum, either subcutaneously or intravenously. He stated that those cases in which the serum was given early recovered, while those in which it was given late generally died. One-third of those given serum from convalescents were physicians with one hundred per cent recoveries.

Dr. P. D. Rothwell discussed mostly the former epidemic of influenza.

Dr. Wm. N. Beggs did not think the epidemic was one of influenza or of multiple infection, but due to some unknown etiological factor. The different conditions found were not complications, only various manifestations of the same disease.

There was further discussion by Drs. J. Lindahl, M. J. Krohn and C. F. Shollenberger.

MARY R. STRATTON,
Reporter.

PUEBLO COUNTY.

The **Pueblo County Medical Society** met Tuesday evening, January 7th, 1919. This was the first meeting in many months, because of the influenza epidemic.

The retiring president, Dr. Josephine Dunlop, delivered her annual address, throughout which she made many timely suggestions. Dr. W. F. Rich, the retiring secretary-treasurer, read his annual report.

The main order of business was the election of officers for the ensuing term. The following were elected: President, Dr. Henry M. Thompson; secretary, Dr. W. P. Hunnicutt; librarian, Dr. Crum Epler; reporter, Dr. B. M. Steinberg; censors, Dr. R. C. Robe, Dr. J. A. Black, Dr. W. O. Patterson; delegates, Dr. Fritz Lassen, Dr. C. W. Thompson, Dr. W. T. H. Baker; alternates, Dr. John Schwer, Dr. H. A. LaMoure.

With the epidemic subsiding, and health conditions reaching a more normal status, Pueblo County Medical Society bids fair to enter upon a successful year.

A symposium on Spanish influenza has been ar-

ranged for our next meeting and, doubtless, many interesting facts will be brought forth.

B. M. STEINBERG,
Reporter.

COLORADO OPHTHALMOLOGICAL.

The regular meeting of the Colorado Ophthalmological Society was held in Denver on December 21, 1918; Dr. C. E. Walker presiding.

There was an informal discussion of the work done by Dr. Edward Jackson as editor of the new American Journal of Ophthalmology, an amalgamation of most of the previously existing eye journals of the United States. Remarks were made by Drs. Black, Libby, Boyd, Crisp, and Strickler. Upon the motion of Dr. Strickler, it was unanimously

Resolved that the society by a rising vote express its appreciation of the work done by Dr. Jackson in the initiation and editing of the American Journal of Ophthalmology.

H. R. Stilwill, Denver, presented a case of traumatic staphyloma of the sclera resulting from a fall in which the eyeball struck the handle of an electric machine. Discussed by Melville Black, Edward Jackson, C. A. Ringle, Otis Orendorff, E. T. Boyd, and George F. Libby.

Dr. Stilwill also presented a case of thrombosis of the central retinal vein in a woman of 57 years of apparently good health; and in connection with the discussion of this case William H. Crisp, Denver, reported a case of thrombosis of the central retinal artery in a tuberculous man of 32 years. Discussed by George F. Libby, Melville Black, and Edward Jackson.

John A. McCaw, Denver, showed a case of orbital periostitis and abscess in the upper lid in a boy of 15 years who when thrown from a truck had struck his nose and left orbit on the cobblestones. Discussed by Melville Black, W. C. Bane, H. R. Stilwill, and Edward Jackson.

Dr. McCaw also presented a case of nodular opacities of the cornea in a woman of 43 years. Discussed by Edward Jackson.

Melville Black, Denver, showed a case of optic neuritis in a man of 29 years, who had a positive 4 Wassermann test. Wm. C. Bane, Denver, presented a case of optic neuritis of uncertain etiology in a married woman of 54 years. George F. Libby, Denver, reported a case of binocular optic neuritis in a woman of about 40 years, apparently due to toxic irritation from alveolar focal infection associated with nasal blocking, and greatly benefited by treatment of these conditions. These three cases discussed by Melville Black, George F. Libby, and Edward Jackson.

W. C. Bane, Denver, presented a case of corneal and uveal tuberculosis in a colored woman of 28 years in whom a tuberculin injection had produced a positive reaction. Discussed by Edward Jackson, C. E. Walker, and Melville Black.

E. T. Boyd, Denver, presented two patients each of whom had suffered a penetrating injury involving the cornea, iris, and lens, with resulting absorption of the last-named structure.

William H. Crisp, Denver, presented a case of traumatic conical cornea in a boy of 12 years who had been struck a severe blow in the eye with an unknown foreign body. Discussed by W. C. Bane, C. E. Walker, Edward Jackson, and Otis M. Orendorff.

James J. Pattee, Pueblo, reported a case of post-diphtheric paralysis, involving the limbs, the pharynx, and the intrinsic muscles of the eyes

(pupillary and accommodative). Discussed by Edward Jackson.

Full reports of these cases are to be found in the American Journal of Ophthalmology.

WILLIAM H. CRISP,
Secretary.

PUEBLO CLINICAL AND PATHOLOGICAL.

The Pueblo Clinical and Pathological Society held its regular monthly meeting at the Congress hotel, on the evening of January 7, Dr. Wilbur Lucas presiding. The usual dinner was enjoyed, after which a number of interesting cases were reported and discussed.

Pregnancy Following Unusual Menstrual History.

Dr. W. T. H. Baker reported a case of normal pregnancy with an unusual menstrual history as follows: Mrs. B., age thirty-five, began her menstrual life at the age of seventeen. Up to the age of twenty-five, she had a regular flow every twenty-eight days, of from three to five days duration. During these years she was extremely well. She had whooping cough just before the first menstrual epoch, but no illness thereafter. She was married at the age of twenty-five. Menstruation ceased and did not reappear for eight years. The patient, because of this, believed herself pregnant, but repeated examinations by Dr. Baker failed to confirm pregnancy. Careful examinations did not reveal any cause for the amenorrhea. She was apparently normal in every way and experienced no discomfort of any sort during the amenorrheal period. During the eight years, about two dozen "nose bleeds" occurred, but she felt no better or worse after the epistaxis. As she expressed it, "I feel perfectly well all of the time." On July 17, 1917, without any warning and with no discomfort, she menstruated for four days. This menstruation was followed by an amenorrhea which lasted until December, 1917, when she again menstruated as before, in a perfectly normal manner. This flow lasted about five days and was a little more profuse than the one in July. On or about January 11, 1918, the patient conceived, but it was not known to her that she was pregnant, as there had been no nausea or any of the discomforts common to pregnancy. After about three and a half months, the woman again consulted Dr. Baker, thinking she was developing a tumor. An examination revealed an enlarged uterus, but knowing her past, he did not make a positive diagnosis of pregnancy until several weeks later. She went through this period in a perfectly comfortable manner, had no trouble in her labor, and was delivered October 27, 1918, of a well formed eight pound girl. The puerperal period was normal in every respect, lactation began on the third day and has continued normally ever since.

The case was discussed by Drs. H. A. Black and W. T. H. Baker.

Dakin Solution Intravenously in pneumonia.—

Dr. R. H. Finney reported fifteen cases of pneumonia treated at the hospital, eight of which were broncho-pneumonia, five double lobar pneumonia, and two right lobar pneumonia; all associated with so called "Spanish" influenza and treated with Dakin solution given intravenously as suggested by Dr. Curfman of Salida. Treatment so given dated from October 31 to November 4, 1918. The cases represented four Americans, four Mexicans, five Austrians, and two Italians, all males ranging from twenty-one to forty-one years of age.

The solution used was that described during the earlier experiments with Dakin solution and

the formula used was that described in the American Medical Journal of December 9, 1916. One hundred c. c. of the solution was given in each case intravenously at body temperature, taking ten to twenty minutes to the injection. All cases but two were in a very serious condition at the time of injection. All cases had routine treatment of either quite large doses of tincture of digitalis or digipuratum, with atropin, codein, etc., as needed symptomatically. One case had received twenty grains of sodium salicylate intravenously. The temperature and pulse did not seem to be affected. The patients became quiet and slept for some hours immediately after injection, but a stimulating effect or any marked improvement did not exist; at least, the three cases that recovered did not show any marked change immediately after injection.

Of the twelve who died, death occurred from three to seventy-two hours following injection. Among the three who recovered, one was in serious condition at the time of injection and was very delirious, having had a relapse after being sick eight or ten days. No apparent change took place immediately after injection and his recovery seemed one of ordinary occurrence following any form of treatment. A second entered in good condition, although sick four or five days with right lobar pneumonia. A third came in in good condition; had been ill seven days and was given the injection to try the solution in a case not seriously ill or far advanced. His recovery seemed ordinary, without any marked change following injection.

Henry Dakin says in his little book that "the solution possesses a slight but definite hemostatic action but actively hemolytic and should not be injected intravenously".

The results obtained were not encouraging. The treatment does not seem to be a rational one and is not recommended by those giving it in these instances.

The case was discussed by Dr. Fred Heller and Dr. William Senger.

Dr. H. A. LaMoure reported as follows on the **Influenza-Pneumonia Epidemic at the Colorado State Hospital.**

There are 1825 persons in the institution, all of whom were exposed to the disease. Those developing influenza numbered 280. Of this number, 62 cases were complicated by pneumonia and 30 died. 109 were given vaccine, 21 of whom developed influenza, seven were complicated with pneumonia, and two died.

This report, and the subject of influenza in general were discussed by Drs. W. T. H. Baker, Wilbur Lucas, Fred Heller, R. H. Finney, F. E. Wallace, Henry M. Thompson and C. W. Thompson. The last named stated in his discussion that at Woodcroft hospital, where the total number of patients and employees numbered about one hundred twenty, the first series of thirty cases of influenza occurred in the men's department and the majority of these cases developed at the same time. None had been vaccinated. The ages of the patients varied from ten to fifty years. Among this number one only developed pneumonia; all recovered. After this time, the employees and women patients were vaccinated and shortly after vaccination was completed twenty-four cases of influenza occurred in the women's department.

Three developed pneumonia and all recovered. The favorable results were probably due to the fact that all who had the disease were cared for immediately upon manifestation of the symptoms and were kept in bed for a week after the temperature became normal. The active mental cases, who were restless and difficult to keep in bed, were given a sufficient amount of codein and heroin to keep them quiet and tractable. The complicating psychoses and neuroses in influenza were of special interest. A number of the psychoses associated with this epidemic are of the infection, exhaustion and toxic type. These cases are usually characterized by marked mental confusion and disorientation. Many of them recover quite promptly.

HENRY M. THOMPSON, Reporter.

Book Reviews

Personal Hygiene and Home Nursing: A Practical Text for Girls and Women for Home and School Use, by Louisa C. Lippitt, R. N., Assistant Professor of Correction Exercises, University of Wisconsin. (In New-World Science Series, edited by Professor John W. Ritchie). Illustrated. Cloth. 256 pages. Price, \$1.28. Published by World Book Company, Yonkers-on-Hudson, New York.

Knowledge of health getting and health keeping, though simple in itself, is so often buried in big medical books and obscured by technicalities that in many cases it is kept from those who need it. With the hope of giving to girls and women practical instruction for daily life, in terms clear to every one, this book has been written. Its purpose is to explain how a girl may attain health and happiness in the present day and lay the foundation for a sane and vigorous old age; to give directions for preventing the spreading of infection from cases of communicable diseases; and to furnish instruction in caring for oneself and one's family in time of accident or sickness in the home.

The Battle of Tuberculosis and How to Win It; a book for the patient and his friends. By D. Macdougall King, M.B. Philadelphia and London, J. B. Lippincott Company.

(See also p. 26, "The Art of Living".)

This book, by a physician who is also a winner in the fight with tuberculosis, presents, in a most entertaining, convincing and instructive manner, the essential facts concerning one's needs in air, food, rest and conduct for defeating tuberculosis.

It shows what can be accomplished by grit, courage and persistence in a fight against this disease, and is well worth quoting to one's patients who are disposed to be discouraged or faint-hearted.—W. H. B.

The Stearns Dose Book: A vest pocket pamphlet giving in convenient form an up-to-date dose table together with tables of incompatibilities, solubilities and poisons and antidotes. Frederick Stearns and Company, Detroit. Price, 25 cents.

LIST OF CONSTITUENT SOCIETIES.

The list of constituent societies, with the secretaries' names and the dates of meetings will be found on advertising page XII.

OFFICERS OF COLORADO STATE MEDICAL SOCIETY.

The list of officers of the Colorado State Medical Society for 1918-1919 will be found on advertising page X.

Colorado Medicine

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Editorial Comment

BASE HOSPITAL NO. 29.

To offer a special welcome to the members of base hospital unit No. 29 is not to slight those outside the unit who have rendered and in some cases are still rendering efficient and unselfish service to the army of the United States. It is simply to honor a group organization which we can all regard as typically a Colorado institution and a part of ourselves.

Base Hospital Unit No. 29, the record of whose career was ably related by Drs. Amesse and Dean, late director and surgical chief of the unit respectively, before a recent gathering of the medical faculty of the University of Colorado, was originally organized by Dr. Henry Sewall of Denver. For technical reasons, however, this organization was disbanded. On July 5, 1917, the faculty of the medical department of the University of Colorado was approached on behalf of the United States government with regard to the organization of a base hospital unit to consist of members of the medical faculty. The Denver and other Colorado newspapers, in spite of accurate information repeatedly furnished to them, have consistently failed to acknowledge any association of the unit with the university; although, as at first constituted, only in exceptional cases did the war department authorize the inclusion of physicians who were not connected with the university's medical department.

This hospital organization shared the difficulties encountered by such organizations in general throughout the United States, in

that the government again and again withdrew from the unit officers who were being assigned to special duties in other branches of the medical service. Thus, for example, Gerald Webb of Colorado Springs was suddenly ordered to proceed from Columbia University to France on tuberculosis work, the protests of the university against this action being ignored.

In June, 1918, the unit was ordered overseas. It proceeded to London, England. On arriving in London, the equipment of the hospital could not be found, but after a couple of weeks, and in spite of the difficulties created by local shortage of material, this deficiency was in large part made good. The hospital was an object of envy to other units on account of its especially favorable location, and for the completeness of its laboratory and x-ray equipment.

After a few weeks' service in London, Major Dean was assigned to special surgical duty among the evacuation hospitals in France. In his absence, Major Cuthbert Powell acted as chief of the surgical section. A few other assignments, from men coming from outside of Colorado, were made on the arrival of No. 29 in London. In the early part of October, 1918, the medical officers of the unit as thus amended were as follows:

Lt. Col. John B. Anderson, commanding officer; Lt. Col. John W. Amesse, chief of medical section; Major Cuthbert Powell, acting chief of surgical section in the absence of Major Edward F. Dean.

Surgical Staff: Capt. William M. Bane and First Lt. Frank Millett (ear, nose and throat); Capt. William M. Finnoff (eye); Capt. Oliver Lyons (genitourinary); Capt. Robert Ferguson, Capt. Judd H.

Kirkham, and First Lieutenants Charles C. Cooks, Sidney B. Conger, Augustine S. Cecchini, Howard H. Hamman, Wilson K. Hobart, Henry O. Wernicke, Frank Dunkle, and F. T. Williams (assistant surgeons).

Medical Staff: Capt. Cyrus L. Pershing and First Lt. E. L. Ray (neurologists); Capt. Amos L. Beaghler, Capt. Ranulph Hudston, and First Lieutenants Harold G. Macomber, Thomas M. Kane, and Raymond E. Peebler (assistants in general medicine).

Laboratory Staff: Major W. Whitridge Williams (chief); Capt. Leonard G. Crosby (radiologist); Capt. Arthur W. Stahl (bacteriologist); and First Lt. Albert W. Dewey (pathologist).

Both in its medical and surgical work in London, and in the evacuation of the wounded and sick for return to the United States, Base Hospital Unit No. 29 unquestionably reflected credit on the University and State of Colorado, and on the Denver chapter of the American Red Cross. Among the interesting experiences which fell to the lot of the medical officers of the unit was that of meeting Sir William Osler, dean of British and American medicine.

THE DOCTOR IN POLITICS.

The representation of various occupations in the persons of our legislators is extremely unequal. And this inequality is nowhere more striking than as between the members of the several learned professions.

It is perhaps natural that the great majority of our lawmakers should be drawn from the legal profession. Acquaintance with the structure and interpretation of existing laws offers a basis for the logical development of new ones. Moreover, we may regard as perfectly easy and natural the progression from that form of debating club which we designate a court of law to the even more abounding feast of conversation and eloquence which is to be found in parliament, congress, or legislative assembly.

But surely the lawyer, as a class, cannot excel, and probably he cannot equal, the physician in knowledge and understanding

of the everyday life of the community, with its joys and sorrows, its vicissitudes of earning and spending, its social inequalities, its triumphs and tragedies of right and wrong living. Yet it is doubtful whether the average legislative body contains one physician for every twenty or thirty lawyers. And when a physician is elected to a legislative body he is likely to find himself and his labors more or less completely ignored by other members of his profession; if indeed he is not classed as a fallen angel whose reputation is forever ruined by contact with the political game.

The present session of the Colorado legislature has witnessed the introduction of a rather considerable number of bills, mostly excellent in general purpose, dealing with subjects in which the medical profession ought to be keenly interested. Thus, we have had a bill dealing with the detection of physical defects in school children; a bill for the establishment of a state psychopathic hospital, a bill dealing with the great problem of mental defectiveness; a bill for the creation of an efficient state board of health; a bill amending the industrial compensation law; a bill to control venereal diseases; and a bill for limiting the matrimonial and procreative opportunities of the criminal and insane.

A melancholy commentary on the interest of medical men in public affairs is to be found in the fact that most of the physicians of the state have not even known of the existence of these legislative proposals. If someone had brought before the senate or the house of representatives a bill related to the practice of osteopathy or chiropractic, the members of these professions (!!) would have swarmed to the lobbies of the state house to voice their protest or approbation. But it may be doubted whether more than one per cent of the licensed medical practitioners of Colorado have actively interested themselves in the passage or defeat of the medical or near-medical measures recently introduced.

The average medical man is altogether too artless and innocent in the matter of politics. He probably contents himself with the general feeling that public representatives as a class are dishonest and selfinter-

ested. On the contrary, those few members of the profession who unselfishly devote their time to following medical bills through the senate and house have recently told the rest of us candidly that most of our legislators have a sincere desire to understand the subjects on which they are legislating or are asked to legislate, and at the same time are for the great part inspired with the ambition to do what is necessary and proper in the public interest.

The average legislator stands in need of exactly that information on medical questions which the physician is capable of furnishing. We have a duty to perform, not merely in treating the physical ailments of the public, but in educating it as how to avoid those ailments. The physician is perhaps already plagued by an excess of medical organizations in the form of clubs and societies. But it is conceivable that much benefit might arise from the formation of medical groups for the study and promotion of legislation along lines which medical science has demonstrated to be for the public good. Above all, our legislative efforts, whether selfish or altruistic in character, must be made upon an organized basis if they are to produce results.

INFLUENZA IN DENVER.

The most reliable method for estimating the death rate from influenza since the beginning of the present pandemic is, at any rate in most of our American communities, to accept as due to this special cause that proportion of the total death rate which is above the normal rate for corresponding periods of the year.

Thus, selecting at random the week ending November 2, 1918, the total number of deaths from all causes in Denver was 155, as against an average of 60 deaths in the corresponding week of the years 1913 to 1917. For this week therefore the mortality from influenza was probably about 95. Two weeks later the total number of deaths was 125, against a normal average for the week of 55, leaving the number of deaths from influenza at 70.

The fatal consequences of this disease were apparently most manifest in Denver in

the week ending December 7, 1918, when the total number of deaths from all causes was 265, as against a normal average of 68 at that season; there being thus in that particular week almost 200 reported deaths attributable to influenza in the city of Denver alone.

A month or so ago it was common talk that the epidemic had lessened or even disappeared. But in the week ending February 1, 1919, the total number of deaths was a little above normal, or 83 as against 72. A week later the numbers were 97 as against 73, or a presumable death rate of 24 from influenza and its complications. A week later again, whereas the average number of deaths from all causes in Denver in the corresponding week of 1913 to 1917 had been 65, the current number of deaths from all causes was 101, or a surplus of 36. The number of deaths reported in the week ending March 1, 1919, was 96 as against a normal of 68.

It is probable that during the colder seasons of the next several years the total death rate in any large center of population of the United States, or indeed of a very large area of the world, will rarely fall to within normal limits. To some extent, of course, this will be due to the fact that many persons will remain debilitated for a long time after recovery from the acute attack of influenza, and that many of these weakened constitutions will fall ready victims to intercurrent diseases. On the other hand, it is definitely to be expected that for a year or two to come we shall continue to witness an appreciable incidence of cases of the recent epidemic disease which, for want of a better name, we have called Spanish influenza.

A CHANGE OF EDITOR.

With the publication of the March issue of Colorado Medicine, the writer, after editing this little journal since June, 1914, will transfer his mantle to the shoulders of another, and retire, as the attorney-general of the United States would say, "to private practice". The editorship will be taken over by Dr. F. B. Stephenson of Denver, who, as associate editor, has for fifteen

months past been active in the affairs of Colorado Medicine.

The retiring editor has spent many happy if rather strenuous hours in conducting the official journal of the Colorado State Medical Society. He has a reluctant and almost guilty feeling in giving up the work, which has been rich in personal relationships and in the consciousness of fulfilling a useful purpose. He joins the Publication Committee in earnestly requesting for the new editor the hearty and steadfast support of every member of the society, but especially of those who by training and position are able to contribute literary material, whether papers or paragraphs, for use in our columns.

Original Articles

THE WAR'S INFLUENCE UPON PRE- VAILING MEDICAL THEORIES.*

EDMUND J. A. ROGERS, M.D., DENVER.

As the medical student becomes absorbingly occupied in the study of anatomy, physiology, and pathology and finds that in the main the activities of the human organism are simply reflex adaptive automatisms, he is apt to accept this as explaining all and to seek no further solution of the questions of the origin and evolution of life and of the underlying causes of behavior.

To gain some comprehension of these questions, it is necessary to consider the human body phylogenetically and to review the whole history of its evolutionary progress from the earliest colloidal mass to its present state of development. In this process, extending probably over millions of years, we may consider each individual life in the infinitely long chain as a step or stage in the slow growth toward maturity.

Reviewing the organism in this way we can see how, step by step, as new conditions arose and new changes occurred in its environment, its progress and development were constantly characterized by modification in the old and by the appearance of new

structures which enabled it to adapt itself to these ever varying conditions. Through the creative tendencies of life, the general feature of each change is an advance toward a more complex and more elaborate organism. Yet sometimes there is retrogression.

Indeed, in studying the innumerable lines along which evolution has proceeded, we seem to see on all sides processes of "trial and error" experimentation; a sort of exploration into the unknown in order to find the best adaptation by which to master the newly developing conditions.

Numerous lines of life unable to meet the conditions of existence seem to have failed in their very inception. Others met with more or less temporary success. Some developed wonderful degrees of adaptation, but failing to meet later conditions, disappeared, while some lines, such as that to which we belong, by constant adjustment and readjustment, have hitherto surmounted all difficulties and still survive. There are probably many collateral branches to all evolutionary lines. Insect life undoubtedly shows the greatest varieties and peculiarities in its lines of life both in extinct and in surviving species.

We see on every side familiar examples of peculiar adaptation; indeed, everything that lives shows peculiar racial adaptive mechanisms. Some of the grosser examples of this are so common that every child is familiar with them. The mention of a few such will illustrate my meaning. To meet the requirements of its environment, the elephant developed a body of great strength and endurance. The compactness of such a body would be weakened by a long neck or an extended head, and so that strange prehensile organ, the elephant's trunk appears, and it is enabled to survive. The giraffe does not need such compact strength, but in order to meet its conditions of life, that long, ungainly neck is devised. Just so the fish's tail and fins, the frog's leaping legs, the bird's wings, the duck's bill, the goose's feet, the horse's hoofs, and so on ad infinitum. In man, the crowning, late invention is, of course, the thumb which gives him his wonderful mechanical adaptability. As the body develops in

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

the complexity of its mechanism, a nervous system is necessarily developed along parallel lines in order that more perfect mechanistic activity may be obtained. We had gone a long way on the road of development before the higher nerve centers were necessary, while the elaborateness of the human brain was late in its appearance. Bergson well defines the brain as the organ of action, for its function is only manifest in the more elaborate and advanced activities of the organism.

We find each distinct stage of evolution characterized by advance as each new condition in environment is met by a readjustment which keeps the mechanism superior to its external conditions. Something more seems to occur in these steps than simple mechanical reaction, such mechanical reaction as we see when the wind and rain shape the rock or when the trees at our mountain timberline or at the sea coast become distorted by the constant storms.

The creative energy of evolution is constantly manifest and the new development is often an entirely new and original device unlike anything that previously existed. It is certainly a mechanistic adaptation, but it is more than a simple reactive mechanical adaptation. Note the evolution of any one of the sensory organs. What mechanical influence calls for the eye or the ear. It certainly renders our mechanism more ideal, but in what could a demand for it have originated if we had had no comprehension of our environment? Can any blind, unintelligent, mechanistic law be imagined which could give us all these progressive and varying developments and adaptations? A law that would enable the living creature to feel its inadequacies and to surmount them by the invention and construction of new complex devices is certainly more than a law of mechanical response and reaction.

In analyzing the details of the activities leading up to each new development, a distinct design seems to be manifest, and this design appears to be executed under the direction of a definite, controlling purpose, and in this process there must be a something which compares and selects, for the variety of adaptive constructions is almost

infinite, even when, as in many cases, the external conditions are closely similar. Under like conditions a mechanical law will uniformly produce similar results.

To me nothing short of an intelligent energy can be behind all these phenomenal processes in evolution. Man is truly a most elaborate adaptive mechanism, but in admitting this we only describe him, we do not attempt to explain him, he is more than this.

It would be a simple matter for one who knows nothing of electricity to describe the dynamo and believe that in doing so he has explained all the power which becomes evident through its activity, but we all well know that the dynamo gives only expression to an energy and force which lie far beyond it. So in the living organism it appears as though the energy lies beyond the machine. No self-acting law of substance meets the requirements of the case and not only must there be an energy acting behind the mechanism, but its varying achievements show that it must be an intelligent energy. Constantly augmenting momentum in progress surely indicates the influence of an external energy, while the phenomena of choice, purpose and memory are the insignia of intelligence. We have already spoken of purpose and choice, and now when we further analyze these activities of evolution, we find that we cannot understand them without recognizing the existence of memory.

As we study each new individual being in one line of evolution, we find that in its growth and development there is a constantly active tendency to reproduce the exact structure and life history that have been evolved by the experiences of its progenitors, not a tendency to exactly duplicate the one immediate ancestor but to produce a sort of selective composite of all that have gone before. Thus we see that the memory of every circumstance in the life line back to its very beginning exists in such form as to directly affect the growth and development of the newly conceived being. This intelligent energy in this way becomes specially individualized not only in each distinct line of evolutionary life, but further and more

definitely in each individual impersonation in the line.

Did regeneration constantly recur along one uninterrupted line of life, the effects of this phylogenic memory would necessarily lead to an increasing similarity between the members of each successive generation. Apparently to produce variation, we find the peculiar device of bisexual generation whereby each new life is the result of the mingling of two closely related but distinct lines of racial memory.

Development is further modified by an inherent power of the individual intelligence to react purposefully, within certain limits, to external influence and so constantly adapt the organism to its constantly changing environment. As these adaptations become fixed and habitual through phylogenic memory, we advance another distinct step in evolution.

The intelligent activity that we have thus far been describing is, of course, an unconscious process, but apparently late in development consciousness becomes evolved, and we become aware of our own being, and in a measure of our own thoughts, and we become able to compare ourselves with other things. Comparison leads to choice, and choice implies volition.

Now following the line of thought of Dr. William McDougall, we discover the individual mind in "the sum of all of the enduring conditions of these purposeful activities". The individual mind is the basis of personality, and in each personality all mechanistic activity is purposefully directed by the individual mind. If all this be true, we can easily see that if the individual can consciously and voluntarily direct the activities of his mind, he can voluntarily direct the mechanistic activities of his organism. The difficulty lies in the fact that we are only beginning to realize the activities and powers of the individual mind. Were we satisfied to stop our investigations with the description of the organism as a mechanistic adaptation, we should never discover the existence of the mind as a constructive agent.

Now, in what way have war conditions affected this question. The war has not produced new medical phenomena, but it

has produced medical cases, which before were too scattered and too segregated to attract general professional attention, in such great numbers that the medical mind can no longer withhold its attention, but is now by compulsion recognizing their meaning and importance. I can only refer to these cases. Our medical journals are constantly describing them. Many thousands of able-bodied, robust, brave men while undergoing the terrible strains of war, without having sustained mechanical or organic injury of any kind, are without warning found to have become helpless and in every way incapacitated. The symptoms present are protean. Every known condition of physical or mental disease may be duplicated, every structure and every sense may be involved, or the disorder may be confined to a single structure or function.

The one diagnostic feature in these war cases is the absence of any organic lesion. The disorder is due, therefore, to some disorganization in the controlling intelligent energy of the body and not to disintegration of the physical tissues; and the results of treatment directly confirm this. Until recently these patients were usually diagnosed as malingerers, hysterics, or insane, and were generally discharged from the army as useless and hopeless invalids. Now we find that there are special hospitals all along the firing line where they are subjected to a purely mental treatment and are, in a vast majority, returned to their proper places in the ranks in a very short time, often only a few days, perfectly restored to their normal condition.

Psychogenic cases are not, of course, confined to war conditions. To illustrate, I shall refer very briefly to two strictly psychogenic cases that came under my care and were seen by members of this society.

In December, 1914, Chas. H., age twenty-eight years, a strong, vigorous, healthy man, was thrown, through an accident to his bicycle, off a bridge on Boulevard F into a deep gulch. He had helped care for friends in the past, one hemiplegic from apoplexy and one paraplegic from a fractured spine. He crawled from the hole and reached a telephone a block away and was brought home

in an ambulance. I saw him a few days later. I could discover no anatomical lesion. He had gradually developed a paralysis of the right leg and everything was paralyzed and anesthetic below a line drawn from the pubis around the upper rim of the pelvis. He recovered completely in a few weeks under mental treatment.

Mrs. W. E. A., age thirty-five years (cir.) was in a serious automobile accident in August, 1915. She immediately developed symptoms of profound surgical shock during which a complete but unstable hemiplegia developed extending even to hemianopsia. Dr. Moleen kindly examined her with me and agreed that her symptoms were purely functional. She also recovered in a few weeks under mental treatment.

In order to more graphically illustrate the control of the body by this subjective intelligent energy, let me call your attention to the experiments made in Chatham R. N. Hospital last year by Dr. Hadfield of the English Royal Navy and reported in the *Lancet* (Nov. 3, 1917, p. 678). Similar experiments have often been made, but never under such strict test conditions. All possibility of deception of every kind was excluded. He suggested to a deeply hypnotized patient that a finger touch was a red hot iron cautery and it produced all the symptoms of a burn, the blister, hyperemia, severe pain, etc., and again he applied a red hot iron to the skin and suggested that it would not burn, and it produced none of the symptoms of a burn, and the seared skin dried up and quickly recovered without blister, hyperemia, or pain. In this we see what we usually classify as automatic reflex absolutely and directly inhibited by the mind, and direct psychogenic action exhibited.

That the circulation is affected through consciousness is unquestionable.

When we consider these phenomena in the light of the evolutionary developments of the human body, it appears to me to be absolutely demonstrated that no law of mechanical reaction can explain all of the activities of the human organism, but that from its first conception to its death physiological processes are constantly affected by an intelligent energy which is individually associated with

the body, and that this individualized energy is the underlying basis of consciousness and that through consciousness much of the physical activity is volitionally controlled.

Now, to sum up my short sketch, it seems more than probable to me:

1. That in the physical creation of the human body its development extends far beyond anything that can be considered as a direct reflex mechanistic adjustment to the environment.

2. That in this development, phenomena occur which can be accounted for only by the hypothesis of an individualized intelligent energy—a personal mind.

3. That consciousness is a manifestation of this personal mind and that through consciousness some of the physical activities of the body are constantly affected.

In this paper there is nothing new or original. I have freely used and discussed, without giving direct credit, ideas found in the following books:

I now make my grateful acknowledgments to these many authors:

William McDougall: *Body and Mind*, 3rd Edition, 1915.

William McDougall: *Primary of Physiological Psychology*.

George W. Crile: *Man an Adaptive Mechanism*, 1915.

Henri Bergson: *Creative Evolution*, 1911.

H. F. Osborn: *The Origin and Evolution of Life*, 1917.

Ernst Haeckel: *The Riddle of the Universe*, 1900.

M. Hanna Thomson: *Brain and Personality*, 1906.

M. W. Eder: *War Shock*, 1917.

Thomson & Geddes: *Evolution*, 1911. (No. 14.)

William McDougall: *Psychology; A Study of Behavior*, 1912. (No. 41.)

Benjamin Moore: *The Origin and Nature of Life*, 1912. (No. 63.)

Frederick Soddy: *Matter and Energy*, 1912. (No. 43.)

W. F. Barrett: *Psychical Research*, 1912. (No. 24.)

Also see many articles in current medical and scientific journals.

For a general semipopular summary, I find most helpful the little books of the Home University Library, edited by Profs. Gilbert Murray (Oxford), J. A. Thomson, W. T. Brewster and H. Fisher.

222 West Colfax Avenue.
Sept., 1918.

DISCUSSION.

George A. Moleen, Denver: The relationship of the mind to the physical structure has been the subject of discussion for ages. Only within the last few years have advances been made with regard to the influence upon the body of the mind and of the body on the mind, so that it is difficult to find out just where one stands with one exception, and that is, if the atoms which compose the psyche and the stimuli through which the mind is made are shut off, there is no mind. That is very certain.

I would not care to go into the biologic differences nor the anatomic theory in the short time at my disposal.

Referring to the functional neuroses of the war, as analyzed by some of the French writers, the literature to which I have had access seems to indicate that these were cases of defective development in the beginning. A great many of these cases were endocrine cases; their disturbance is to be explained on that basis. The resistance against external influences which has been mentioned has not been up to the standard; their equilibrium has not been what it should be, and hence disturbance of equilibrium plays a part and operates as a result of the environment afforded, and none of them hold the stage by themselves.

The phenomenon of hypnotism has been limited. Freud, Jung and others have found they could not hypnotize every case, hence they had to adopt the plan of psychoanalysis for the purpose of treating their cases. We meet with such cases as those reported by Monroe and Quackenbush, and many men have advocated hypnotism as a curative measure. They have all related their experiences which have been even more phenomenal than that of applying the red hot iron without causing an eschar.

I am fully in accord with what has been said with reference to the value of psychotherapy. It has its application in some cases, and it has some application in all, but of the cases which are definitely to be benefited by psychotherapy we have only a limited knowledge at the present time.

O. M. Gilbert, Boulder: I think we must all recognize the fact that now psychotherapy has a place in organic conditions as well as in functional conditions. Formerly, we made the stupid blunder of trying to show that only functional cases, or only those cases that had nothing wrong with them were benefited by psychotherapy, be it Christian Science, or other form of "mental healing". That is a serious mistake. I believe it has an influence in all cases, and any man in carefully observing his cases cannot fail to see that there is definite benefit from psychotherapy in organic conditions, and there is no use in closing our minds to the benefit derived from it.

Let me mention in this connection the typical case of a woman who had a long existing ulcer of the leg which had given her great trouble and

finally healed. Subsequently she returned with a pimple on the other leg which she said began like the other. Her teeth were chattering, because she was so nervous over it. As I watched the leg, drops of perspiration stood out on it, and I compared it with the other leg to see if it was perspiring and it was not. I construe this as an evidence of marked vasomotor change in a local area from mental concentration upon the supposedly affected part. I believe decidedly that the Christian Scientists or any other type of psychotherapists actually tip the balance between life and death in many cases in the gravest organic conditions, and so it is not worth while to deny that there is something in psychotherapy in organic conditions. Since we all admit that an individual may be put to death by suggestion, how can we deny that he may be materially benefited by the same sort of process?

Dr. Rogers (closing): I am grateful for the discussion which has taken place. Nothing shows more thoroughly the change of attitude in the medical profession toward medical phenomena of every kind than the statements you have heard from the men who have discussed this paper.

I purposely omitted all theological discussion. I thought I had disposed of it by using the phrase, so much used in psychology, "Trial and error experimentation".

Dr. Sewall refers to Divine Power, which I certainly do not deny. A universal intelligent energy might be thus interpreted. He also speaks of a personal soul. It may be that Soul and Individual Mind are almost synonymous terms. Yet it seems beyond question that the processes of nature in evolution are experimental, and are exploring to a certain extent into the unknown. There could be no error or experiment according to the old theological fiat dogma and under such a dogma there was no place for freedom in mental action. But these are metaphysical questions and I tried to confine my discussion to direct deductions from known scientific facts.

Psychotherapy, that is, the correction of disordered mental and physical conditions through the restoration of normal mental activity, is scientifically accepted, but the particular mode of its application is still in the experimental stage. We do not yet know which is exactly the best way of voluntarily affecting our subconscious activities. There are any number of books written on the subject, but they are generally unsatisfactory, as each is written to support some special theory of treatment and thus misses a broad discussion of the whole subject. The most discussed modes of treatment are some forms of suggestion, especially with hypnotism and psychoanalysis. These are very closely related, indeed almost supplemental to each other, for in order to know what to suggest, it is generally necessary to find the disturbing element in the mind through some form of analysis. Dr. Eder, in his little book on War Shock, gives a practical discussion of this question. In many of his pure war shock cases, in order to save time, he used suggestion under hypnosis without psychoanalysis, with eminently satisfactory results. This, I think, shows that psychoanalysis is not the final solution of mental therapeutics. Indeed, we are a long way yet from knowing how we shall ultimately most satisfactorily and scientifically reach and affect these hidden powers which are the essential agents in all mental and physical healing, no matter what the practice. We see results from almost every form of treatment and from every device used and it seems certain that no man practicing medicine gets results except when arousing this sub-

conscious energy. It is the impression that we make through consciousness upon the subconsciousness of our patients that counts for infinitely more than the remedies we give. I am not attacking the use of medicine—it is often useful—but I believe that the effective energy behind the recovery is not in the drug we give, nor alone in the operation we perform, but primarily in the fact that we reach this un-understood, but always active energy which I have tried to describe in my paper.

OBSERVATIONS ON HEREDITY.*

GEORGE A. MOLEEN, M.D., DENVER.

The opening of a new chapter in the history of the Society succeeds upon the closing of one shadowed by the greatest war in human history. With the streaks of the dawn of brighter days well advanced, we can in reflection appreciate that the shadow has fallen with greater depth upon no class of society than the organized medical profession, in evidence of which we have seen our fellowmen and associates willingly offering their lives and fortunes, and often the lives of their best and dearest, for great ideals. The meaning of human life and endeavor is a problem thus thrust upon us and especially upon those who have to remain behind.

A scientific society to be maintained, in the absence of many of its chief participants, requires the redoubling of interest and effort on the part of some and the assumption of action on the part of others to render secure the preservation of the purposes and objects of organization.

To conclude my administration without acknowledging the honor I have felt in having been chosen as your presiding officer, would be to omit one of the most pleasing essentials; and to thank you for the confidence and support is a duty in response to my feeling of gratitude. The memory of my tenure will live with me as a compliment and as a duty it was a pleasure to fulfill. The success of the year's transactions is to be credited to the aid and support of yourselves, the faithful cooperation of the committees, and especially your secretary, to all of whom I desire to record my appreciation.

As a closing privilege it has become conventional for the retiring chairman to address the Society on some topic of general interest. To this the subject chosen conforms, and holds the special importance of meriting more consideration and thoughtful study to bring the understanding of inheritance, its relation to normal and pathological traits in man, as well as its limitations, from the obscurity of mysticism and the extravagance of speculation.

Heredity has been variously defined from "the conveyance to the offspring of the properties of the parents, and of the parental stock, so that the child inherits racial, familial and specific characters" to the simple definition of Thompson of "a genetic relation between successive generations". The medium of relation is admittedly the germ-cell; the rôle of the germ-cell, however, is not to transmit organs and tissues in miniature, as was formerly thought, but simply to hand on certain tendencies to development.

In a broader sense it has been recognized that "like produces like", but no one could say why offspring resemble their parents, nor why they differ from them, for often "like" produces "unlike".

It has long been known that certain human traits are inherited, but the laws of heredity—if there be any laws—seemed to be so erratic in their manifestations that they eluded detection, and, therefore, could not be formulated. So much knowledge of the subject has now been acquired as a result of the labors of recent and living investigators that heredity may be regarded as a definite branch of science.

The researches of Mendel and those subsequently conducted on similar lines have shown that it is highly probable that the germ-cell contains within it a series of forces or "determinants" which direct and control the development of each separate organ and tissue in the body. That "the germ-cell must react to and be influenced by its environment", as stated by Beard, is a question of extreme interest and importance; this is especially emphasized by the works of Paul (C. Paul, "Plumbism and the Fetus", Paris, 1861) regarding the effect of lead; of Lize (Union Médical, 1862) on

*Presidential address, delivered at the annual meeting of the Medical Society of the City and County of Denver, January 7, 1919.

the influence of mercurial vapors; of Féré (Comptes Rendus, Soc. d. Biol. Paris, Vol. 52) Combemale (quoted by Sullivan in "Alcoholism", p. 185, 1906) Stockard (quoted by Adami, The Lancet, Nov. 2, 1912) and Bertholet (Centralbl. f. Path. u. Path. Anat., Bd. 20, No. 23, 1909) on alcohol; and lastly by Gheorghiu, whose statistics show most convincingly that "there is a direct relationship between parental tuberculosis, syphilis and acute infections affecting one or the other parent, and these gross examples of maldevelopment"—referring to a long series of monstrous births occurring in the Paris hospitals.

Associated with inheritance is the subject of "variation" which conception had its origin with Darwin as a factor in evolution. From a medical as well as from a biological point of view, the variability of microorganisms is a subject of the highest interest aside from its importance in relation to inheritance. This is apparent, if, as Adami says (Medical Contributions to the Study of Evolution, Adami, 1918, p. 103), it can be clearly demonstrated that modifications of varying degrees of permanency can be induced in sundry species of bacteria, that "new races" are capable of being developed under the influence of conditions that are easily recognizable and easily controlled.

In summarizing the prevailing views, P. C. Mitchell (Encyclop. Brit. 1911, v. 27, p. 912) says: "Variation in organisms is primarily the necessary result of the absence of uniformity in the distribution of physical forces of the globe, in fact it is a mere necessary response to the variation of inorganic conditions. So, also, in the broadest way, the result of the existence of variation is equally inevitable. Some individuals happen to fit the environment better, or to respond to the environment better, and these on the average will survive their less fortunate neighbors."

Much confusion has developed from the failure to distinguish between that which is "hereditary" and that which is "congenital", according to Adami (l. c. p. 140) who again emphasizes that "there is no such thing as hereditary syphilis". There is congenital syphilis, and there are, to em-

ploy Fournier's term, inherited "parasymphilitic lesions", but "hereditary" and "congenital" are not and must not be regarded as interchangeable terms. This view is based upon the statement that "any disturbance due to influences affecting the individual from without while in utero is acquired." It is an antenatal acquirement or is of congenital origin and cannot be spoken of as inherited.

Finally, it would seem that the evidence, up to the present time, points to a developmental or constructive series of events, which may be regarded as distinctly "vegetative": the propagation of a type of cell having the characteristics of its parent—subject to the modifications through variation—but differing in the course of its life history as a result of environmental influence and the effects of the various responses to the stimuli of such surroundings. It is where the former or vegetative characteristics end and the effects attributable to environment begin, that the line between inheritance and acquisition may be drawn.

The practical questions with which we are constantly confronted are: What can be transmitted and what are the limitations of transmissions? Biologically, it may be interesting to be able to compute the dominant or the recessive characteristics, but when we accept as dominant traits as given by Drinkwater (Practitioner, Vol. 98, 1917, p. 274) such nervous diseases as hereditary ataxia, Huntington's chorea, spasmodic asthma, and deaf-mutism; and as recessive traits, Thompson's disease (hereditary myotonia), astigmatism, multiple sclerosis, paralysis agitans and others, the value remains largely academic.

It would be of considerably more practical value to us as physicians, could we but realize and demonstrate that the physical, in contradistinction to the functional properties of the physical acquired through adaptation to environment, admits of the most complete transmission. Only recently, Sano (Sec. of Psych. p. 21, Proc. Roy. Soc. Med., 1917) has directed attention to the possibility of hereditary resemblance in the study of the convolutional patterns of brains in the London County Asylums. The seeming intricacies of the convolutions and

fissures of the cerebrum almost bar an adequate analysis of a problem thus complex. Nevertheless, a control of comparisons with non-relative brains has enabled Sano to assert that the brains of relatives—brothers, parents and children—are more like one another than those of non-relatives. This appears to be particularly true when, as in the negro and other races, the types are less mixed than is the case among most British subjects.

In the light of this study, hereditary peculiarities that characterize individuals and produce certain types of resemblances between relatives show a prospect of illumination. Recurrences of form and stature, color and skin patterns, psychologic similarities and even chemical oddities of metabolism like cystinuria and alkaptonuria have been shown to fall within the schemes of explanation developed by students of genetics and particularly as a result of experimental investigations of Mendelian problems. Blue eyes and red hair and polydactylism have become amenable to interpretation in accord with established "laws of heredity." (Jour. A. M. A., Vol. 21, 1918, p. 1540.)

On the other hand, Azboukin (*Trav. de la Clin. Psych. de l' Univ. Imp. de Moscou*, 1914, No. 2) reviews the question of heredity according to Mendel and applies the principles of the study to men, but here the result, he says, is not so clear as in plants and animals.

The line of inheritance has been one of relative interest in which many postulates have been advanced such as that of "crossed inheritance", and I may be pardoned if I digress from the academic for the moment to say that it is interesting to observe, during the taking of case records over a number of years, the frequency with which inherited characteristics in the first born are derived from the parent of the opposite sex; in the second child, from the parent of the same sex; and in subsequent births the tendency to participate in the qualities of both parents increases progressively; in other words, it is quite the usual observation that the two first offspring partake of the dominant characters

of the progenitors as mentioned, while the tendency to a blending of the physical attributes progresses subsequently.

Many inquiries have been made since the rediscovery of the work of Mendel to determine whether hereditary abnormalities and defects in man are transmissible in accordance with Mendel's laws. In some abnormalities such as brachydactyly, color-blindness, congenital cataract, night-blindness, etc., there is good reason for thinking that they are so transmitted. In the case of immunity it is argued as legitimate to suppose that successive immunization through several generations will cause new side-chains to become more and more fixed and that racial immunity is brought about by these means. Intoxications, whether exogenous or bacterial, or disturbed states of the constitution due to alterations in glandular activity or to excess of certain internal secretions, or of substances ordinarily neutralized by them, when existing and acting on the germ cells would be truly somatogenic.

Of the gouty diathesis—to quote Adami—if in a given percentage of cases the gouty state shows itself in those giving an absolutely negative history of gout in their progenitors, then we are at liberty to regard the gouty diathesis as an example of truly somatogenic acquirement of an inherited and inheritable constitutional state. It is the constitutional state that is inherited, and strictly speaking, this is an inheritance of an acquired condition.

In the case of "neuropathic diathesis", however, in spite of the excellent work of Rosanoff and Orr, Davenport and Weeks, the conclusion can not be regarded as established according to Tredgold, who gives the following deductions from his own observations:

"Firstly, that if both parents are healthy and free from neuropathic taint, their offspring is healthy.

"Secondly, that if one or both parents, although free from neuropathic inheritance, suffer from alcoholism, severe tuberculosis, plumbism (and possibly other poisons), the nervous system of the offspring tends to be more unstable and less durable than that of the offspring of healthy parentage.

"Thirdly, that the mating of such neurotic

offspring with healthy and untainted individuals may, after a few generations, eradicate the nervous abnormality, but that the mating with individuals of like constitution tends to produce offspring with an accentuation of the abnormality, and an increased predisposition to more serious neuropathic manifestations.

"Fourthly, that the mating of two individuals of such marked neuropathic inheritance yields offspring in whom there is a definite tendency to imperfection of brain development, or mental defect.

"Fifthly, that the mating of two mentally defective individuals yields offspring who are all defective."

The influence of acquired diathesis upon offspring may be referred to as an indirect transmission; here, for example, the toxins of syphilis or tuberculosis set up molecular disturbances in the germinal idioplasm and the offspring show various forms of arrested and imperfect development of different tissues due to intoxication.

Acquired mutilations cannot be conceived as admitting direct transmission; at most the possibility of indirect effect where the mutilation is extensive or affects organs playing an important part in general nutrition can be admitted.

On acquired characters Tanzi (Text Book of Mental Disease, 1909, p. 59) is emphatic in saying: "Studies on the subject of physiological heredity have served to show how great an objection there is to accepting the view that acquired characters are transmissible, notwithstanding their evident utility to the individual and to the species."

The supposed examples of such transmission are so rare and of so doubtful a character that biologists of unquestionable authority have concluded there is no such thing as epigenesis, and that the facts point to the occurrence of an evolution in the restrictive sense of a progressive attainment of powers, functions and organs potentially performed. And he says that genuine pathological heredity, that is to say, the transmission of the same disease, is much more rare than is generally believed. Instances are cited of families in which alcoholism and suicide have been frequent, but education, example and the suggestion derived

from precedent create a physical contagion that ought not to be confounded with heredity. Another error consists in the confusion of generic heredity, which is simply the transmission of weak powers of resistance, with specific heredity, which is the transmission of disease. The old experience of Brown-Séquard in which artificial epilepsy was induced in guinea-pigs, and spontaneous epilepsy in the second generation, is criticised by the statement that he merely debilitated animals extremely prone to convulsions, and, indeed, liable to take fits during any illness, and placed them under conditions in which they produced enfeebled offspring, which in all probability would have manifested their own organic insufficiency in the same way, that is in epileptic convulsions.

To the truly mythical and not far from the realm of superstition belongs the so-called "maternal impression" by which a pregnant woman, seeing or imagining something which impresses her, is presumed to have transmitted it to the offspring. One suggestive coincidence in several million failures is nourishment fitting only to the fable.

This subject was selected because of its importance to physicians who are daily confronted with problems in which inheritance invariably plays a part. No class of scientific men have so abundant an opportunity to contribute to its elucidation. It has been possible to touch upon various phases, some accepted while others are the subject of controversy of biologists, but I trust sufficient has been brought out to attract attention and stimulate observation.

The trend of the subject would seem to suggest that the farther we get from the truly vegetative as transmissible and assume or speculate upon the function or property as influenced or stimulated by environment, the farther we get from the fundamental. For example, a large temporosphenoidal convolution, the function of which is to register sound impressions, may be inherited as readily as a large nose or a large hand; and its possession logically carries with it the aptitude related to its function, which is exercised early and long leading to the correspondingly rich volume of impressions or "experiences" from which

must emanate a proportionately rich judgment and interpretation so often misconstrued as "natural born" or "inherited genius". And this is likewise applicable to other areas.

In conclusion, and as a summary of this view, I find no clearer statement than that of Sir Edwin R. Lankester (*Encyclop. Brit.*, Vol. 28, p. 1039) who states:

"A result of the greatest importance * * * is that education has no direct effect upon the mental or physical features of the race or stock; it can only affect those of the individual. Educability, defects or excellences, or peculiarities of mind or body, can be handed on from parent to offspring by protoplasmic continuity in reproduction. But the results of education cannot be so handed on.

"Aptitude and want of aptitude, which are innate and constitutional, are transmitted to offspring, but not the results of experience, education and training."

Likewise, blemishes of the stock, defects of body, resulting as such in the defective arrangements of the impression which go to make "mind" (hence mental defect) may be to some extent corrected in the individual by training, but cannot be got rid of in the stock by any such process.

A defective stock will perpetuate its defects if allowed to breed, in spite of the successful concealment of these defects in the individual by training or other treatment.

325 Mack Building.

ROENTGENOLOGIC EVIDENCE OF EARLY PULMONARY TUBERCULOSIS.

A Review of Some Recent Literature.

F. B. STEPHENSON, M.D., DENVER.

In more or less advanced cases of pulmonary tuberculosis the diagnostic aid of the roentgen ray is now recognized without question by the internist. It determines the character, extent, size and location of lesions, shows cavities and pleuritic adhesions, thickenings and effusions, and gives indications for artificial pneumothorax as well as a check upon its results. But the internist's

mind has not yet been freed of doubt that the x-ray in incipient and early cases of the disease offers him material aid in his diagnosis. His attitude is based upon experiences gained at a time not far in the past, when roentgenologists were still undecided upon many points which have since been made clear. It must be remembered that there is a multiplicity of structures in the chest which differ in their character, all of which also vary enough in different individuals to make no two plates appear exactly alike; also that pulmonary tuberculosis has varying pathological characteristics which, besides having had to be identified individually, were to be differentiated from pathology due to other causes. This will explain why there existed for so long many opposed opinions and a chaos of speculation.

It has taken years to unravel interwoven signs and coordinate the findings of the many workers in this field, but, while this accomplishment has not been wrought to absolute finality, there does exist today a definitely worked-out basis for diagnosis of early pulmonary tuberculosis which gives successful results. Therefore, a review of these present day views is timely.

Since "activity" presupposes extension and is therefore accompanied by "incipiency" in the neighborhood of a given active lesion, the two subjects are not easily separable in discussion and hence are both given consideration in the following abstracts.

Types of pulmonary tuberculosis. Heise and Sampson², of the Trudeau sanatorium, say: "It" (the x-ray) "would also show us that roughly one-half of the incipient cases are of the patchy or parenchymatous type, probably a more advanced or a more unfavorable lesion than the peribronchial type, or the expression of a different kind of infection, either as to time (previous sensitization) or as to route of infection, or both."

Overend and Hebert³, of London, England, likewise make a definite distinction between tuberculous peribronchitis on the one hand and periacinous (parenchymatous) tuberculosis on the other. The same distinction is made by Holmes¹, of Boston, and the general trend among roentgenologists is toward an acceptance of this stand, the two types being

more or less distinct also in their clinical course. The former of course would be a lymphatic tuberculosis until parenchymatous involvement occurred.

Several of the quotations further on also touch upon the types of chest tuberculosis, generally, as will be seen, making the distinction between a peribronchial, lymphatic type, and a really pulmonary one.

Roentgenographic and roentgenoscopic signs. Held and Roemer⁶, quoting Groedel, say: "Evidence of a fresh process is indicated by small flecks with tendencies to coalesce." Holmes¹, who is roentgenologist to the Massachusetts general hospital, says that "a pathological process in the lung structure tends to produce changes in the lymphatics draining the infected area. Therefore we should expect to find a shadow in the lung substance representing the site of the pathological process, and a fan-shaped area of thickened linear markings representing the course of the lymph channels draining the area. The peribronchial glands in the infected area may also show changes. . . . The third (parenchymal) is the most common type and is seen as an insulated group of small white areas, usually near the periphery of the lung, from which spreads a fan-shaped area of thickened linear markings which extend toward the hilus. Thickened and mottled markings in the region of the bronchi may also be seen; also large and, possibly, calcified peribronchial glands. As the process increases and the areas become larger the shadows tend to overlap and the typical fan shape is lost . . . it is of special importance that the position of the group of small areas of increased density, which represent a group of tubercles, be accurately located. If it can be stated that these shadows are in the periphery of the lungs, great weight should be placed upon their presence. If, however, they are along the bronchi, the process may be only glandular."

Major E. L. Davis⁴ says the following in reporting on the study of one thousand chests at Camp Devens, Mass.: "Pulmonary tuberculosis is demonstrable on the roentgenogram even in its earliest stages. Success in demonstrating the tuberculous lesion

depends on the care in the technic and on the keenness of the interpreter. The most definite signs of active pulmonary tuberculosis as seen on the roentgenogram are soft, fuzzy, flaky shadows in the areas occupied by the linear markings of the normal lungs. When these shadows are found at the periphery and are mottled as if broken up with shadows indicative of peribronchial thickening leading to them, we consider them characteristic of the acute, active tuberculous lesions. The soft shadows are interpreted as tubercles with areas of congestion about them, and the thickening of the trunks as lymphatics draining the infected area. Soft mottling in the apexes with peribronchial thickening leading to it we consider the most definite sign of active phthisis presented on the roentgenogram."

Mary E. Lapham⁷ summarizes her findings in one hundred and fifty x-ray examinations of children taken at random in Highlands and Atlanta, Ga., and compares them with findings in children with definite clinical signs of tuberculosis or symptoms suspected of being due to tuberculosis, in the Highlands Camp sanatorium. While the purposes of her article are along other lines, the following description of initial structural changes (in children) is pertinent to our subject:

"The first abnormal conditions are seen in the enlargements of the bronchial glands and there may be various degrees of size; the second set of changes consists in thready infiltrations running from the root of the lung up toward the apex. Then in successive stages the bronchial glands become larger with sometimes a central lighter area which suggests softening: the thready infiltrations become more and more massive; mottling and circumscribed nodules are seen, until finally the typical picture characteristic of undoubted tuberculosis is presented. . . . The conception of tuberculosis as a disease due to exposure to infection which results in the so called 'implantation' does not seem to be confirmed by x-ray plates which rather suggest that tuberculous processes begin in the bronchial glands of infants and children for some unknown reason and persist indefinitely."

Overend and Hebert⁸ classify chest tuberculosis as to form—glandular, peribronchial, parenchymatous, etc.—but give the initial lesion in the earliest stages as minute peribronchial or periacinous foci which vary in size from that of a millet seed to that of a pea. They then give differential points between these and similar shadows due to other conditions, and continue: "Considering these radio-foci as the essential objects of our search, a classification may be attempted (a) in accordance with the particular localities of the lung in which they may be found grouped more or less abundantly, or (b) according to the actual extent of the area involved at the time of examination, and the number of foci perceptible. . . . As regards the radio-foci themselves, in the less advanced stages they may be (a) discrete, (b) aggregated and small, or (c) confluent."

A. B. Moore¹⁰, of Rochester, Minn., over four years ago said: "Early pulmonary tuberculosis gives but a faint shadow. As the process advances, the density becomes greater. . . . From the standpoint of the radiographer, the diagnosis of pulmonary tuberculosis depends, the writer believes, on the localization of definite areas of increased density varying in size and degree with the stage of the disease. . . . In the vast majority of cases the radiograph will demonstrate any lesion that the physical examination will reveal. . . . In borderline cases, the roentgen ray cannot determine the activity of a tuberculous process."

E. S. Blaine¹¹ made the following statement three years ago: "An oft repeated question is, 'Can incipient tuberculosis be demonstrated by an x-ray examination?' It depends partly upon our conception of what incipency is. Many cases that are diagnosed clinically as incipient are found to be advanced when examined by this method. When shadows are found which represent tubercular pulmonary involvement the case is no longer an incipient one, even though the clinical aspect indicates it to be so. At times the only sign of incipient tuberculosis will be a lame diaphragm on the affected side or the hilum may be noted to be very slightly increased or the peribronchial shad-

ows may have a woolly outline and be more in evidence than normally, or one apex fails to light up as well as the other. There may be a slight increase of shadows on one side of the lung over the other, which is seen to involve the peripheral areas, or the small finer branching shadows may extend upwards into the apices. These are the signs obtainable by means of x-ray examination which, when taken together and carefully considered, enable us often to diagnose incipient tuberculosis before it can be determined by any other method."

Regarding activity, Major George C. Johnston⁹ of Pittsburgh has this to say: "If disease is active, tuberculous areas will be smoky, foggy, hazy, blurred and indistinct. If disease is quiescent, the plates will show sharp demarcation, sharp contrast, dense small shadows, no fog, no smoke or haze. Dense shadows of regular outline and sharp demarcation denote healed processes."

Kennon Dunham¹² of Cincinnati is the exponent of the principle that a tuberculous lesion is shaped more or less like a cone with the base toward the lung periphery and that it will therefore project a fan-shaped shadow upon the flat plate. The branches of the lung tree will appear as the ribs of the fan and be of increased shadow density. If the fan appears closed, it points to healing; if wide open, to activity. This fan is somewhat elusive and many roentgenologists fail to find it in some instances where it theoretically should be present.

A lately issued United States Army x-ray manual¹³ which, throughout, goes directly to the point with concise instructions, has this to say on early pulmonary tuberculosis, as being the boiled down accepted knowledge: "The expedient of having the patient cough and noting whether the apex clears up is an uncertain one and will not definitely distinguish an atelectasis from an infiltration . . . but (the fluoroscope) is of great value in the study of the diaphragm, since in a considerable percentage of the cases of early tuberculosis the diaphragm is partly or completely immobile on the affected side. This appears to occur irrespective of the presence of diaphragmatic adhesions. . . . The early lesions of tuberculosis gen-

erally appear in the upper lobes, and are usually found just below the clavicle and not necessarily above it. Frequently they occur near the apex of the axilla, and appear usually as a group of faint homogeneous shadows, indistinct in outline, varying in diameter from several millimeters to a centimeter. The pathological basis of these shadows is probably an agglomeration of tubercles surrounded by a pneumonic exudate. As these lesions progress the shadows increase in number so that they coalesce, producing a larger homogeneous shadow. A caseation of the lesions, which usually supervenes, is represented on the plate by an increase in the density of the shadows, which become more distinct and irregular in outline. In most cases, sooner or later, there is noted a development of fibrous tissue which shows as fine strands in the infiltrated area.

"While the radiographic image varies according to the state and duration of the lesion, yet the foregoing description represents a fairly frequent form of early tuberculosis.

"In order to diagnose incipient tuberculosis there must exist one or a group of infiltrations as above described; to base it on the presence of strands radiating from the root of the lungs will lead to frequent error. The importance of observing a careful technic is nowhere so great as in the diagnosis of an early lesion, because here it is vital to eliminate the errors and confusion resulting from an undue prominence of the lung markings."

Older views. The following deals with older opinions which tend to persist in the mind of the internist.

Sherman G. Bonney⁵ of Denver said in 1908: "Previous convictions as to the slight practical value of the x-ray in the diagnosis of very incipient cases without well defined structural lesions have been substantially confirmed." This was ten years ago. Doctor Bonney gives me authority to say that today, following the later developments in technic and the newer pathological study, he attaches more importance to the x-ray in the diagnosis of early cases of pulmonary tuberculosis than he did at that time.

Held and Roemer⁶ touch upon this subject as follows: "The controversial side as to the importance of the x-ray in the early diagnosis in pulmonary tuberculosis gained strength when it was found that patients with râles at the apex and even the presence of tubercle bacilli in the sputum were reported to have negative x-ray findings. The answer to this is that limited small infiltrations throw no shadows. There are some specialists in pulmonary tuberculosis even today who disclaim the qualification of the x-ray as an aid in the early diagnosis because infiltrations throw no shadows. Such men certainly do not act in the best interests of diagnosis."

X-ray compared with other methods. No diagnostic means employed in medicine is infallible and the x-ray is not an exception to the statement. The roentgenologist cannot take the entire responsibility from the internist and he does not want to do so, but he asks for the x-ray equal consideration with other means, for it offers evidence where they sometimes fail to offer any and confirms what they sometimes leave in doubt. In that connection:

Holmes¹ says, "An opinion based upon roentgen evidence alone is of about the same value as an opinion based upon the physical findings alone. Without a careful history, both lose much of their worth; combined with other evidence, however, it may be of great value, as without doubt it is capable of revealing changes in the lungs which cannot be demonstrated by any other method."

Heise and Sampson⁷ give these statistics from the study of a series of cases: "In seventeen percent the physical signs showed a lesion on one side or the other which was not detected by the x-ray. The physical signs in these cases were largely found at the right apex and at the bases. In thirty-two percent the x-ray showed a lesion on one side or the other not demonstrable by physical signs. . . . From this last analysis it may readily be seen that the x-ray is of great value to us in the diagnosis of early cases without definite physical signs. Furthermore, a much more accurate knowledge of the extent of the disease and the nature

of the pathology is obtained by the use of the x-ray."

E. L. Davis⁴, commenting further on the Camp Devens series of cases, says, "I am heartily in accord with the principle that pulmonary tuberculosis can be fairly and definitely diagnosed only with the combined consideration of clinical, physical and roentgen findings. There are instances, however, in which the roentgen signs are decisive even though physical signs are not found."

Heise and Sampson² explain the lack of x-ray signs in some instances when clinical signs are present in this manner: "In the study of our cases we have been fairly frequently impressed with the fact that it is possible for a patient to have clinical evidence of pulmonary tuberculosis without the x-ray plate showing any gross densities. However, upon examination one could see definite tubercles linearly distributed; concomitant with the pulmonary ramifications which latter were somewhat accentuated and at times hazy in appearance. We then firmly believed, with other observers, that there was a type of pulmonary tuberculosis which could be classified as peribronchial from the evidence of the disease seen on the x-ray plate. Further study of this type in connection with the symptomatology, physical signs and laboratory findings, has led us to believe that the differentiation is warranted."

Dunham³ tells of another type of case which gave no x-ray evidence of pulmonary involvement: "Cases which expectorated large masses of tubercle bacilli for a short time, and were not very sick but coughed and spat some blood, and showed no fan-like markings on the plates, were certainly a great trouble to explain. I watched three such cases most carefully. Two have since expectorated lung stones, all have made perfect recoveries and have been well for four years. Also the plates showed unusual shadows in the hilum or at the tracheal bifurcation. I have concluded that they were cases of mediastinal tuberculosis and that one or more of the nodes had broken into a bronchus and that when the necrotic area had been expelled they recovered. In all cases the cough subsided, and

the hemorrhage did not return; one, not until the lung stone had been expelled but the other two after three or four weeks' rest. All have remained well. A fourth has done as well but I have watched him less than six months. I now feel that a favorable prognosis can be made in all such cases when the x-ray plates give a negative finding."

It may seem that some lack of clarity in the descriptions given indicates uncertainty on the part of the author. This is not the case. The idea is definite, but the effort at its expression is sometimes a failure. Several descriptions of a given sign will be found to differ in color and present different pictures to the reader, due to the shortcomings of language and in some instances, perhaps, to a writer's ineptitude at description. But if, out of the apparent jumble of hazy directions, the individual worker will select them singly, apply them to his own plates and compare them with findings in his own experience, he will comprehend their meaning and thus acquire basic criteria for conclusions which will compare very favorably as to accuracy with those derived from other means of diagnosis. Sometimes he will be mistaken—sometimes physical signs are misleading. Often the x-ray will show what the physical signs have failed to show, and vice versa. Therefore, correlation of all findings is necessary for the nearest approach to accuracy, and is advocated by all roentgenologists. In my opinion, however, the roentgenologist should not know the history or results of physical examination until after he has read the plate. It is so easy for him to find something on any plate which is suggestive of a suspected condition under inquiry that, knowing the history and physical signs, he must continually keep his imagination in check. I myself avoid this bias of judgment by following the rule of not eliciting or accepting a report of physical signs and history in a case until I have made the plate reading, after which the much to be desired correlation of this with all the other evidence is done.

Purely incidentally, I should like to add that the conditions of x-ray diagnosis as described should be sufficient argument

against the giving of this work by the practitioner to the non-medical technician and then making his own diagnosis, unless of course he be skilled through experience and be very familiar with the particular technic employed. X-ray plate reading is an art founded upon a knowledge of anatomy, physiology, pathology and physics, coupled with training.

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INOPERABLE CANCER.*

C. E. TENNANT, M. D., DENVER.

Fortunately the term "inoperable cancer" grows more limited with each year's progress in surgical technic and it is probable the near future will bring more of the so-called inoperable forms of cancer under still better control, either with the use of the knife or through some immunizing

agent. Its treatment at the present time, and under modern methods, is almost as hopeless as it was ten years ago. A ray of hope, however, is seen in the newer methods which are being developed, and it is possible that the percentage of the immediate mortality may be somewhat lowered, while a postponement of the terminal stage is quite probable. In discussing this subject I shall not presume to cover the many forms of treatment, but confine myself to a few of the modern ones with which I have had some experience.

As to the etiology of cancer, there are almost as many theories as there are investigators, while those actually engaged in the treatment continue to attribute it to the various sources of irritation, such as cicatrices and traumatic fields, as well as to recognize its apparently spontaneous origin in certain areas.

Cohnheim, when promulgating his theory of the origin of cancer, did not undertake to explain all malignancy by the theory of the embryonic type of cell nests, but he called attention to the close morphologic similarity between the embryonic and the malignant cells. His theory, however, as it is accepted today, answers well many of the problems connected with the inception and growth of malignant tumors. Their lawless disregard of the regular order of growth and their willful invasion of neighboring structures are the characteristic features by which these growths are identified by most clinicians. When this invasion is so pronounced that one may recognize the growth by these characteristics, it is already bordering upon the inoperable; consequently it is before these signs manifest themselves that successful operative measures should be instituted. Even then, and during the period in which the neighboring tissues are exercising inhibitive restraint, metastasis is, no doubt, already progressing and the seeds for future development have already been sown on favorable soil.

This brings up a question which, to my mind, is extremely important in the study of malignancy; and that is susceptibility. Why is it that in some cases even where metastasis has occurred, and excision of the

*Read before the Pueblo County Medical Society, June 5, 1917.

primary mass with the secondaries has been done, there is no recurrence; yet, in other cases, after the primary excision of a very small and easily operable growth, a general fulminating carcinosis follows? Why is it that in some cases we find an active proliferation of the limiting stroma developing a thick fibrous barrier, for a time impeding further invasion of the neighboring normal tissue, while in other cases nature seems to offer absolutely no resistance?

Are we, as yet, justified in referring to this type in which poor resistance occurs as a "cancer diathesis"? And is it consistent to speak of the cancer diathesis as a factor in the development of the extremely vicious and prolific types of metastatic cancer? Or, is it due to an infectious parasite of morphologic similarity to that of the "bacterium tumefaciens" found in plants by Dr. Irwin F. Smith, pathologist in charge of the Bureau of Plant Industry, United States Department of Agriculture? I am inclined to the opinion that before long our pathologists will confirm some such theory, or definitely demonstrate that the so-called metastatic transplants are the result of some form of infection, either bacterial or parasitic. Dr. Helen F. Craig of Denver has suggested the probability that cancer is due to, or has its etiology in some infectious organism; and she points to the improbability of the transmission of the large cancer cells through as small a space as is found in the terminal arterioles, before their lodging in other tissues. She also points to the similarity of the reaction which is found when normal tissues are invaded by bacteria to that which occurs in the ordinary forms of medullary cancer.

I have frequently observed during the treatment of cancer that, after a certain period of time during which successive treatments have been given to local recurrent growths, nature seems to lose its protective factor, whatever that may be, and an apparent low resistance to malignancy develops, followed by a rapid and fulminating general carcinosis; this malignant process involving most or all of the thoracic and abdominal viscera.

It is also interesting in the autopsy of

these cases to note the three organs usually free from this secondary invasion; it is seldom we find the heart, spleen or kidneys involved in the final conflagration. This fulminating carcinosis, however, is precipitated so suddenly that it seems hardly fair to attribute it to metastasis alone. Morphologically, there are two types of cancer which are of interest in connection with the newer methods of control because of their differing reactions. One is the soft exuberant, succulent, or medullary cell type, which has but little or no connective tissue stroma, either passing through or around the growth; and which extrudes itself into and out of the surrounding tissue. The other, as may be inferred, is the scirrhous form in which the small crowded cells are closely enveloped and compressed by connective tissue, this stroma after a time seeming to keep pace with the cell proliferation, and thereby, in a measure, holding in check the malignant invasion of the surrounding structures. The first type, or medullary form, seems to yield more satisfactorily to the application of the various forms of heat.

The theory upon which the more recent methods of treatment of inoperable malignancy are based is that the cancer cell or cells of the embryonic type have a sensitiveness to heat and radiant energy far greater than has the normal adult cell; for it has frequently been shown that a temperature of one hundred and thirty-five to one hundred and fifty degrees Fahrenheit will destroy the delicate proliferating malignant cells, and also that when they are exposed to forms of radiant energy they are converted into monstrosities and finally die. To secure the uniform and constant temperature, evenly distributed throughout a malignant mass, and to reach the neighboring metastatic transplant, has been and is now a great problem.

There are but few structures in the body exempt from primary carcinoma, notable among these being the nerve trunks, bone and striated muscles. All other tissues are the frequent primary hosts of this unwelcome guest and, because of this diversity of susceptible tissues, the mode of attack and

the therapeutic agent used must necessarily be varied.

One will naturally find most of the newer methods of treatment among the electrical derivatives, since electricity is so readily transformed or converted into many forms of heat and radiant energy. Fulguration has been a justly popular method of treatment in certain locations, such as the skin, bladder and mouth, but its therapeutic effect is only superficial, although quite adequate when applied for superficial results.

I am strongly convinced that diathermy has a very wide field of usefulness in the control of inoperable cancer, and also great possibilities of application, because the temperature generated by the high frequency apparatus is easy of control and application. The writer has used it very successfully in practically all parts of the body, as in the abdominal cavity, between the coils of the intestines, in uterine cancer, and on the surface of the body; and everywhere with very gratifying results. This form of heat will not carbonize the tissues, since the temperature is evenly diffused throughout the mass, and a general coagulation necrosis is induced after which a total excision may follow with comparative ease of manipulation.

I wish to emphasize the fact that the temperature secured from the high frequency apparatus will not carbonize although very high, and that this is one of the very strong points in its favor. Another is that the coagulated mass may be immediately excised after the treatment, thereby eliminating all subsequent slough and systemic absorption.

Dr. J. F. Percy of Galesburg, Illinois, has been doing extensive work in cancer of the uterus and breast and his results have been very satisfactory with these desperate and inoperable cases. His theory is that the application of the ordinary iron is inefficient because it carbonizes the surrounding tissues and the carbon, acting as an insulation, prevents the rising of temperature in the surrounding malignant tissue to a point sufficiently high for the destruction of cancer cells. From experiments made on large pieces of beef, I am convinced that his position is correct. Dr. Percy has ingeniously devised a set of cautery irons applicable to

cervical and breast cancer and with the rheostat the heat can be readily controlled in these irons. As a result, his method is known as the cold iron process. When heated, these irons are applied for a period of an hour or more and the temperature should not exceed one hundred and thirty to one hundred and forty degrees in the mass. At this temperature the tissues will not carbonize, and yet it will, according to experimental data, be sufficiently high to arrest further development of all cancer cells exposed to the temperature. The slough which follows, however, is always severe and may at times overwhelm the patient. To offset this it is a good plan to bathe the tissues frequently with a weak chlorinated solution such as has been devised by Dakin.

In a comparative series of experiments which I have made on masses of beef and the living body with the use of a thermometer and definite temperature recordings, I have been impressed with the fact that with diathermy, properly applied, a more constant, rapid, diffuse and intense temperature, which is under constant and perfect control, can be secured, than where the cold iron is used. When this treatment is used in cancer of the cervix uteri and followed by a total hysterectomy, within a period of six months thereafter the results are more encouraging than when either the radical operation or heat alone is used.

Few cases of inoperable cancer are successfully treated without the application of the x-ray at some stage of the work, especially where deep therapy is necessary. Sometimes it is best applied prior to the radical treatment and in other cases it is better as a follow-up treatment. Roentgen therapy has very definite therapeutic action upon cancer cells, but unfortunately, unless it is intelligently used, a destructive influence is also exerted upon the host's tissues. This occurs when applied in too large a dose, since it excites a progressive endarteritis obliterans upon all the vessels lying in the rays' path. The cutting off of the vascular supply to these areas means inevitable death to the tissues supplied by the vessels, and we are sometimes confronted

with a so-called x-ray burn. So far as we know up to the present time, nothing less than a total excision of the burned area will bring relief. Unfortunately, these burns do not manifest themselves until long after the treatment, and unlike the heat application, one cannot determine at the time of the application the real amount of tissue destruction.

Radium, while an exceedingly valuable agent in the newer method of treatment of inoperable cancer, may be likewise criticized, for although its influence upon the tissue cells is much more superficial than that of the x-ray, its pathologic or destructive action upon the blood vessels is quite similar and, as with the x-ray, the end results are never known until some time after its application. Radium should never be applied for more than ninety milligram hours to any one malignant mass, and the proper selection of suitable screens is the great problem yet to be worked out. I have attributed much of the uncertain results, both as to the negative reaction and unnecessary destruction, to the uncertainty of our present methods of determining the therapeutic dose.

In conclusion, permit me to say that the more I have had to do with the care of inoperable cancer, the more I have been convinced that the proper time to treat these cases is in the earliest or so-called operative stage, since the care of cancer with other than radical operative measures brings little more than grief to both patient and surgeon, with an immeasurable amount of suffering to the patient and but a small reduction in mortality. On the other hand, the use of these agents, intelligently applied, in cases which have gone beyond the operative stage will, in many instances, afford the victim considerable added life and a reasonable amount of comfort. We are therefore justified in making a more careful and painstaking study of these valuable agents and the methods for a better technic in their application.

612 Empire Building.

News Notes

The death of Dr. Arthur R. Pollock of Monte Vista occurred February 23, 1919, from influenza.

Dr. Robert M. Shea of Denver has been honorably discharged from the navy and has resumed practice at his former office in the Majestic building.

Lieut. L. H. Wade arrived in Denver March 5 on a few days' furlough from Fort Douglas.

Captain M. J. Keeney of Pueblo has been honorably discharged from the army and will soon resume practice.

The following honorable discharges have also been announced since last issue of **Colorado Medicine**:

R. L. Downing, Bayfield; C. F. Eakins, Brush; R. C. Kirkwood, Boulder; A. C. Magruder, G. B. Webb, Colorado Springs; G. M. Anderson, E. G. Griffin, J. R. Hood, J. McCarroll, T. A. Triplett, Denver; A. L. Stubbs, La Junta; W. W. Yates, Loveland; J. R. McCracken, Nederland; B. F. Blotz, Rocky Ford; C. H. Waxham, Sugar City; J. R. Espey, Trinidad; V. A. Hutton, Florence.

Dr. W. R. Leverton, now in the service at Fort Bayard, N. M., would like to become associated with another physician or group of physicians in order to be able to continue tuberculosis work; or, failing that, would like to know of a good location for general practice.

Dr. William Senger of Pueblo was married March 4 to Miss Edith Knott at Los Angeles, California.

Dr. C. E. Sidwell has recently located in Longmont and will specialize in eye, nose and throat work.

We regret to record the death on March 5 of Dr. Osee Wallace Hoffman, long a practitioner in Denver and well known to the profession in that city.

Lieut. Col. Henry W. Hoagland of Colorado Springs, who has been in charge of the government hospital at Azalea, N. C., for the last year, returned to Colorado Springs early in March, having been honorably discharged from army service.

According to the daily press, medical officers at all army camps throughout the country have been ordered by Surgeon General Ireland to obtain one or more specimens of every species of mosquito found in the vicinity of their camps. The mosquitoes will be classified and placed in the army medical museum.

A call for four expert pharmacists and three physicians to go to Siberia for one year's service with the American expeditionary forces has been issued by the mountain division of the American Red Cross. Those who wish to apply for the work may call at headquarters, Fourteenth and Welton streets, Denver.

Major R. L. Drinkwater has returned to Denver following his honorable discharge from the army.

Major Harold G. Garwood of Denver says, in a letter to his wife, that he has been made chief sanitary inspector of the ninetieth division of the U. S. army, now located near Barnkastel, Germany. He further states that there is a rumor that his division, in which are many Denver men, will return to this country in March.

Major Robert Levy of Denver, who returned from Camp Lewis with an honorable discharge on February 19, has resumed the practice of otolaryngology at his former offices in the Metropolitan building, which were maintained during his absence.

The Harrison Act, as amended by the new war revenue act, will be mailed postpaid to any druggist, physician or dentist who will send a postal request therefor to "Mailing Department, Parke, Davis and Co., Detroit, Mich."

El Paso County News.

The following doctors have been discharged from the M. R. C. and have resumed practice here: Drs. A. C. Magruder, Gerald B. Webb, Charles F. Stough, Will Howard Swan, J. B. Hartwell, C. Morrison, E. M. Marbourg, A. H. Peters, W. K. Hills.

Dr. James R. Stewart, late secretary of the El Paso County Medical Society, died of influenza-pneumonia December 6, 1918.

Dr. Z. H. McClanahan has recently returned from a visit to the Mayo Clinics.

Dr. S. W. Schaefer has returned from a visit to his former home in Mississippi.

Captain George Bancroft writes that he is with the army of occupation in Germany.

A letter from Dr. M. E. V. Fraser is quoted as follows in Trail and Timberline, the bulletin of the Colorado Mountain Club:

"The following is an excerpt from a letter from Dr. Fraser, dated December 5. Having a few days 'en repos', she was spending them touring the country in search of Ford parts. Shortly after this letter was written she assumed charge of a hospital at La Ferté-Milon:

"The city of Rheims is a sad sight. One of the Red Cross workers said that from a tower at Chalons-sur-Marne she had been able to count but fifteen buildings that boasted absolutely intact roofs, and this in a city of 120,000. The cathedral, a skeleton in part, still stands as if in mute defiance, but it is chipped and scarred, and in parts roofless. The roof of the nave is still there. Great shell holes in the streets about it showed that the Hun paid particular attention to this great piece of fine art.

"At Fismes on the Vesle (which our boys call Fizez on the Vessel or Veslay) we met some of the burial corps of our army. They were collecting and burying our American dead in neat little cemeteries. In that at Fismes they had 581 and were soon going to Bazoches, where the press of recent battle had left many uninterred. Unlike the previous day, the air was crisp and dry and the sun shone, much to our joy, for we were still wet from the trip of the day before. At the American Ambulance at Soissons we were given a good dinner of steak, potatoes, cabbage, and wonderful baking powder biscuits. As we had tasted only French war bread for months, these seemed like cake to us. We fell on them with avidity, to the amusement of the boys.

"We found Soissons another sad place. The cathedral has been badly shelled, but still stands defiant. Many streets are impassable and shut off to all traffic. As I passed one house with the side blown away and the furniture exposed to view, I wondered if the bureau or the bed would be the first to fall from the badly sloping floor of the second story."

Dr. Farrand Appointed Head of Red Cross.

Dr. Livingston Farrand, President of the University of Colorado, has been appointed by President Wilson as Chairman of the Central Committee of the American Red Cross, to succeed William H. Taft.

As Chairman of the Central Committee, Dr. Farrand will become the executive head of the National Red Cross organization on the retirement

of the War Council, which will take place March 1st.

In changing the Red Cross from a war to a peace basis far greater tasks will be involved than those undertaken during the ante-war period, tasks that will require the full time of those interested with the executive duties.

Since the entrance of the United States into the war, Dr. Farrand has been the director of the tuberculosis work of the International Health Board in France, and has been in close contact with Red Cross activities. His broad knowledge of European conditions, his high executive qualifications and the vital force of his very unusual personality will all be vital factors in increasing the usefulness and broadening the scope of Red Cross work.

Dr. Farrand's work in this and foreign countries has shown administrative ability of the highest order and in dealing with complicated political, social and professional situations overseas he has displayed in a marked manner exceptional qualities of diplomacy, tact and cooperation.

That the program of the American Red Cross under peace conditions will be virile, statesman-like and broad is unquestioned.

A Joint Influenza Committee has just been created to study the epidemic and to make comparable, so far as possible, the influenza data gathered by the Government departments. The members of this committee, as designated by the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service, and the Director of the Census, are: Dr. William H. Davis, chairman, and Mr. C. S. Sloane, representing the Bureau of the Census; Dr. Wade H. Frost and Mr. Edgar Sydenstricker, of the Public Health Service; Colonel D. C. Howard, Colonel F. F. Russell, and Lieutenant Colonel A. G. Love, United States Army; Lieutenant Commander J. R. Phelps and Surgeon Carroll Fox, United States Navy.

New and Nonofficial Remedies. During February the following articles were accepted by the Council on Pharmacy and Chemistry of the A. M. A. for inclusion with New and Nonofficial Remedies: Nonproprietary Articles: Biologically Reactive Food Proteins. Merc and Co.: Tannin Albuminate Exsiccated-Merck. E. R. Squibb and Sons; Cow's Milk Allergens—Squibb, Egg Allergens—Squibb, Wheat Allergens—Squibb. Takamine Laboratory: Neoarsaminol, 0.15 gm. tubes; Neoarsaminol, 0.3 gm. tubes; Neoarsaminol, 0.45 gm. tubes; Neoarsaminol, 0.6 gm. tubes; Neoarsaminol, 0.75 gm. tubes; Neoarsaminol, .09 gm. tubes.

Medical Societies

BOULDER COUNTY.

The Boulder County Medical Society met in regular session at the Boulderado Hotel, February 6, 1919, at 7:30 p. m. Dr. Campbell presided, and in the absence of the secretary, Dr. LaRue was appointed secretary pro tem.

Under clinical case reports Dr. LaRue presented a case of keratoconjunctivitis, demonstrating the patient, a boy eleven years of age, with a marked scrofulous tendency, very large caseous tonsils and with such an endocarditis that the internist objected to any form of general anesthesia for tonsillectomy.

Influenza in Boulder.

The program of the evening consisted of impromptu discussions of the recent epidemic of influenza in Boulder. Dr. M. E. Miles, city health officer, was first to talk and laid considerable stress upon the etiology. He was of the opinion that the profession had not come to any very positive conclusions as to the germ causing the disease.

From a comparative study of the death rate in Boulder as compared to many other cities, such as Colorado Springs, Boston, Chicago, etc., it seems that our death rate was comparatively low. There were one hundred and five deaths in Boulder, eighteen among soldiers who came here from Montana, bringing us the infection. Practically all of these deaths were from pneumonia complicating the influenza, a very few being from uncomplicated influenza, and one from edema of the larynx. In that some cities reached a death rate of thirty-four per thousand, while ours was only between eight and nine deaths per thousand population, and that very few cities had even thus low a death rate, it was considered that the epidemic was very well handled in Boulder.

All means of prevention, such as the wearing of masks and the like, seemed to Dr. Miles to be of undetermined value. He was of the opinion that about forty per cent of any community would have the disease, regardless of all ordinary precautions and this seemed to have been very well verified in many cities. Dr. Miles thought the influenza bacillus was the most important bacteriological agent and that it was sometimes found in pure culture. It would seem that where pneumococci and streptococci were in great evidence the cases were more serious. Many cases developed empyema, which Dr. Miles thought should be aspirated and not treated by resection.

Dr. O. M. Gilbert talked on the internal side of the disease and said that in his experience there had been nothing encountered in which the medical profession was so helpless as in this epidemic. He thought, however, that this experience would stimulate research along these lines and in turn be productive of much good. He referred to the statement made by Dr. Miles that this epidemic seems to run its course—to burn out all the available combustible material and then stop. Dr. Gilbert agreed to this in part, but thought that intelligent treatment was more than well worth while. Much stress should be laid on sanitary and hygienic measures.

Dr. Gilbert rather believed in the vaccine as a prophylactic, regardless of the fact that many recent investigations would, from a standpoint of theory only, seem to show that vaccine was useless. He administered vaccine to many persons, one hundred and twelve of whom he was able to very accurately follow up and he found that there occurred among these one hundred and twelve no serious cases of influenza.

In active treatment Dr. Gilbert considers large doses of salicylates one of the sheet anchors. Counter irritation, especially with mustard, was applied as a routine together with the early use of digitalis. He believed that one of the most essential things was to get to bed early and stay there. Unless this were carried out he was sure complications would multiply. Among rather unusual complications he reported one hernia and a few cases of meningitis. However, he was inclined to think that the nervous and mental complications would come late and were just beginning to appear.

Dr. Green, of the Boulder Colorado Sanitarium, was asked to talk on the surgical complications

of influenza. He agreed with the former statement that in cases of empyema the results of resection were not gratifying. Many cases which seemed to have a large quantity of pus were found to contain very small quantities of thin fluid. Aspiration in his opinion was the better procedure in most cases. He cited one very severe case of influenza which seemed to be of the relapsing type. After the patient seemed practically well of the "flu" she developed signs of gastric disturbance with tenderness around McBurney's point. She also showed considerable irregularity of the heart, such as they have gotten to calling at their institution a "flu heart." The lungs were absolutely negative. There seemed to be increasing signs of appendicitis and on opening up the abdomen a pus appendix was removed. The day after operation there began an albuminuria which went up to eight per cent. Blood appeared in the feces as much as three to four ounces at a time. The patient became weaker and weaker, and râles which appeared for the first time after the appendectomy began to disappear and were completely gone in a day or two. The patient became uremic and died in coma. It is possible that she had chronic appendicitis, but she gave no history of it.

Dr. Green saw only one case die of influenza without pneumonia or other complications. He would avoid all operating possible and by all means avoid general anesthesia. Nephritis has been a rather frequent complication.

Dr. Kirkwood, recently discharged from the army service, where his work has been on tuberculosis, was asked his opinion concerning the lighting up of an old tuberculous process by an attack of influenza. He said that his experience was that very advanced cases of pulmonary tuberculosis who had the "flu" did badly, but that the early tuberculous recovered from influenza as readily as did the non-tuberculous. He was not of the opinion that influenza started up tuberculosis, at least not many cases had as yet developed. He thought, however, that it was rather early to decide definitely and that it was possible that much latent tuberculosis will begin to show up from now on having been started up by the influenza. He thought it might be possible that many cases which are coming to the cantonments now diagnosed tuberculosis are not tuberculosis but present signs of acute lung conditions from having been gassed.

C. L. LA RUE,
Secretary pro tem.

The regular monthly meeting of the **Boulder County Medical Society** was held in the Commercial Association rooms in the Boulderado Hotel on March 6, 1919. The meeting was called to order by President Campbell.

Dr. LaRue presented the subject of the new public health hospital which is soon to be built at some place in Colorado. He wished an expression from this society as to whether or not influence should be brought to bear in an attempt to have this hospital located at Boulder. The subject had already been previously discussed by the Boulder Commercial Association and other similar organizations, and, while there seems to be some very slight objection on the part of the laity, it seems now that since educational measures have been taken, everybody wants the hospital located at Boulder and in fact is greatly enthused over it.

From a standpoint of climate, it is considered that none in the state is better than that offered at Boulder. From a standpoint of transportation, few towns have better, on account of the connec-

tions and hourly service on the interurban between Denver and Boulder. From a standpoint of business only, Dr. LaRue very highly recommended that this institution be located here. He could not see how the expenditure for buildings of a million and a half dollars should not benefit the people generally in a financial way.

Dr. Kirkwood followed Dr. LaRue's talk and agreed very much with the sentiment expressed by Dr. La Rue. Dr. Kirkwood had extensive service in such sanatoria and in such work while he was a major in the army, and very highly recommended that we do all in our power to have this hospital located at Boulder.

After discussion by most of the members present it was decided that this society unanimously welcome the bringing of this hospital to Boulder and endorse the work of the Boulder Commercial Association in urging that it be located here. Unanimous support was pledged by this body, and Dr. LaRue was appointed to draw up proper resolutions expressing the sense of this meeting and send them to the proper authorities immediately.

Dr. Green of the Boulder Sanitarium gave the paper of the evening entitled "Tropical Medicine", and talked mostly about his experiences as a physician in Africa. He illustrated his talk with very lovely photographs, thrown on the screen, the originals of which he made during his service in Africa. The paper was enjoyed by all present and elicited a very free discussion.

Major Kirkwood and Dr. Joseph Cole were guests of the society.

C. L. LA RUE,
Secretary.

CITY AND COUNTY OF DENVER.

The regular meeting of the **Medical Society of the City and County of Denver** was held Tuesday evening, February 4, 1919. President Jackson presided.

Dr. Clarence Herbert Morian was elected to membership in the society.

The program began with a paper by Dr. Charles A. Ferris on Dystocia. He gave a very thorough treatment of the subject. Dr. Ida Valeria Beers, in opening the discussion, recounted a case of prolonged labor due to tough adherent membranes. Dr. Foster H. Cary spoke of the lessened emergency work and mortality when there has been an early examination followed by observation during pregnancy. He also spoke of the great advantage of social service in giving prenatal care. There was further discussion by Dr. C. S. Elder and Dr. L. J. Weldon.

Maj. E. F. Dean gave a very interesting talk about his experiences and observations during his foreign service.

Dr. Goetz gave a short talk upon her work of lecturing on social hygiene and the venereal diseases.

MARY R. STRATTON,
Reporter.

The regular meeting of the **Medical Society of the City and County of Denver** was held February 18, 1919.

Dr. Jackson in the chair. The following is abstracted from the minutes:

The board of censors reported favorably upon the names of Dr. E. Agnes Brandon and Dr. John W. Meacham.

The names of Dr. Zdenko von Dworzak and Dr. Frank Washburn were proposed for membership and turned over to the board of censors.

A number of state senators and representatives were present on invitation to hear and take part

in the discussion of the bills relating to medical affairs.

Dr. Strickler read and discussed House Bill 222 on Drugless Healing.

Dr. Shere presented and discussed Senate Bill No. 58 regarding Compensation of Employees. Discussed by Dr. Fowler. Dr. Strickler asked if Dr. Shere needed the assistance of the Society. Senator Dr. O'Brien asked how the schedule compares with that of other states. Discussion by Dr. O'Brien. Dr. Shere closed the discussion.

Dr. Taussig presented the State Department of Health bill, Senate Bill No. 240 by Senator O'Brien.

Dr. Hickey presented the Fincher Bill, Senate Bill No. 429. Discussion opened by Dr. Sharpley. Continued by Dr. Sewall, Dr. Morgan, Senator O'Brien, Dr. W. H. Crisp, Dr. McKelvey, Senator Coldren from Weld Co., and Dr. Campbell.

Dr. Bates moved that a Legislative Committee of seven be appointed, of whom the President should be one. Seconded by Dr. W. H. Crisp. Carried. The following members were appointed on the committee: Drs. Jackson, Hickey, Taussig, Sewall, Strickler, Moleen and Minnie C. T. Love.

Dr. John Davis presented House Bill No. 335, relating to Venereal Diseases. Dr. Sharpley opened the discussion; continued by Drs. Spitzer, Bigelow, Hickey, Campbell; Dr. Davis, closing.

Dr. Bigelow presented Bill No. 35 concerning Marriage and Eugenics.

Dr. Mary E. Bates presented the bill relating to the State Home and Training School for Mental Defectives. Discussed by Dr. Moleen.

Dr. Strickler presented House Bill No. 58.

The following members were appointed on the Board of Directors: Drs. G. M. Blickensderfer, O. M. Shere, and Edward Jackson.

Dr. Bates referred to Dr. Bigelow's Bill on Schools.

Coffee and sandwiches were served following the meeting.

MINNIE C. T. LOVE,
Secretary.

EL PASO COUNTY.

At the January regular meeting of the **El Paso County Medical Society** the following officers were elected: President, Dr. Frank T. Stevens; vice president, Dr. Clarence Arnold; secretary, Dr. Claude E. Richmond; treasurer, Dr. Edward Moore.

At the February meeting of the **El Paso County Medical Society**, the following papers were read:

1. Hyperpiesia: Its Essential Features Distinguished from Hypertension of Cardio-Renal Disease, Dr. B. B. Grover.

2. Tricks of the Kidney, Dr. J. B. Hartwell.

CLAUDE E. RICHMOND,
Secretary.

LARIMER COUNTY.

The **Larimer County Medical Society** held a special meeting February 19, 1919, for electing officers and fixing dues for the current year. There were present Drs. Yates, Kickland, Carey, Norton, Taylor, Brownell, Gleason, Halley, Winslow, Morrish and Stuver; also Dr. Wyckoff of Loveland, a visitor. Dr. Kickland was elected president for the evening's meeting. The society then proceeded to the election of officers with the following result: Dr. W. F. Brownell, president; Dr. W. W. Yates, vice president; Dr. E. Stuver, secretary; Dr. W. H. Winslow, treasurer; Dr. W. A. Kickland, delegate to the state medical society; Dr. S.

C. Halley, censor. The censors are now Kickland, Carey and Halley. No further business being presented, the meeting adjourned.

E. STUVER,
Secretary.

MESA COUNTY.

The Mesa County Medical Society met February 6, 1919, for the annual election of officers. The result of the election was as follows: President, Dr. Robert B. Porter of Fruita; vice president, Dr. K. Hanson of Grand Junction; secretary-treasurer, Dr. Carl W. Plumb of Grand Junction; delegate to the state society, Dr. H. S. Henderson of Grand Junction; alternate, Dr. H. R. Bull of Grand Junction.

C. W. PLUMB,
Secretary.

COLORADO OPHTHALMOLOGICAL.

The regular meeting of the Colorado Ophthalmological Society was held in Denver on January 18, 1919; Dr. John A. McCaw presiding.

W. C. Bane, Denver, presented a case of corneal and uveal tuberculosis on which sclerocorneal trephining had been done for the relief of increased tension, with good result. Discussed by J. A. Patterson, Edward Jackson, D. H. Coover, C. E. Walker, E. R. Neeper, W. H. Crisp, and in closing by Dr. Bane.

Edward Jackson, Denver, showed a man of 65 years upon both of whose eyes an iridectomy had been done for glaucoma by Dr. E. V. L. Brown of Chicago; the result being retention of some vision. Attention was called to a communicating vein between the superior and inferior branches in the left eye. Discussed by W. H. Crisp.

W. C. Bane, Denver, showed the enucleated eye in a case of shot injury in which the bullet had passed completely through the eyeball.

W. C. Bane, Denver, again showed a case of neuroretinitis which had been exhibited at the previous meeting; the patient having in the meantime regained some of the vision of the eye. Discussed by H. R. Stilwill, E. R. Neeper, D. H. Coover, and Edward Jackson.

W. F. Matson, Denver, presented a man from whose left eye a fragment of steel had been removed through a scleral opening by means of the giant magnet belonging to Dr. C. E. Walker. Discussed by C. E. Walker, W. C. Bane, E. R. Neeper, and F. E. Wallace.

Edward Jackson, Denver, and C. O. Eigler, Denver, presented a case of probable choroidal disturbance, with possible proliferating retinitis, dating from infancy, and perhaps due to a hemorrhage at birth.

Upon the suggestion of Dr. C. E. Cooper, representing the Colorado Otolaryngological Society, it was decided to hold the March meeting of the Colorado Ophthalmological Society on the first of March, in order to put this meeting on the same date as the "Triological" society.

Fuller reports of the clinical cases here mentioned may be found in the American Journal of Ophthalmology.

WILLIAM H. CRISP,
Secretary.

Book Reviews

The Medical Clinics of North America. Volume II, Number II. (The U. S. Army Number, September, 1918). Octavo of 330 pages, 67 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Published Bi-Monthly. Price per year: Paper, \$10.00; Cloth, \$14.00.

This issue of the Clinics is designated as the "U. S. Army Number." The contributions are based exclusively upon material gathered at the base hospitals of the various cantonments. Much space is allotted to the respiratory infections and resulting temperatures—the pneumonias in particular—which prevailed in most of our camps from the fall of 1917 to the summer of 1918. Hamburger and Foe report exhaustively their experiences with pneumococcus and streptococcus infections and measles. McCallum dwells on the pathologic aspects of the pneumonia encountered during the same review. Valuable diagnostic hints on Infection of the Thorax are given by Letchfield. In common with others, he speaks of the fluoroscope as being of inestimable value in the diagnosis of intrathoracic affections. It has enabled him to detect pneumonias which failed to betray their presence by physical signs. He is convinced that the pleura never attains such thickness as to materially interfere with the transmission of sounds. Another valuable observation is that a pneumonia process which reaches the lung periphery but does not extend to the hilum is apt to interfere with voice and breath sounds and lead to a diagnosis of effusion. Miller and Lusk's article is based upon eight thousand cases of pneumonia seen at Camp Dodge. Thirty-two per cent of all the streptococcic pneumonias developed empyema. Cecil's article on Empyema constitutes an excellent treatise upon this subject. He finds that pneumococcic empyema is relatively infrequent, occurs usually after crisis, and is apt to pursue a benign course. The hemolytic streptococcic pneumonia, on the other hand, gave rise to empyema in fifty per cent of the cases; this complication appears quite early and is attended with a mortality of fifty-six per cent. Early resection in the latter leads to a tremendously high mortality; however, when deferred until the patient is well advanced in his convalescence, it is almost invariably successful. To relieve the intrathoracic tension prior to operative interference, repeated punctures are advocated.

Brooks gives a most comprehensive description of Neurocirculatory Asthenia. He recognizes its close relationship to Graves' disease, and is disposed to attribute its manifestation to disordered action of the chromaffin system. He regards those afflicted as unfit for military training.

Fritch from Beauregard and Goodman from Camp Jackson report the results of the cardiovascular boards. Tachycardia is most frequently encountered. Kahn gives complete records of a number of cases of paroxysmal tachycardia with polygraphic tracings.

Joslin and Gage's article on Postoperative Pneumonia is instructive. They fail to note any relationship between prevailing pneumonia and weather condition and the incidence of postoperative pneumonia. This complication occurred most frequently after abdominal sections and notably after herniotomies. In fully one-third of the cases the condition was manifested within twenty-four hours of the operation. They insist upon rigid exclusion from the surgical wards of all who are

suffering from even the mildest respiratory infection.

Herrick reports twelve cases of meningococcal pericarditis. He reiterates the belief expressed in previous publications that meningococcal meningitis is but a single manifestation of meningococcal sepsis.

Williamson, in his article on Prevention of Communicable Disease, gives simple suggestions which might be profitably adopted in civil practice.

Among a few other valuable articles, Scott speaks on Drug Addictions and Mix on Anthrax, with a report of six cases, five ending in recovery.—E. F.

A Manual of Diseases of the Nose, Throat and Ear:

By E. B. Gleason, M.D., Professor of Otolaryngology in the Medico-Chirurgical College Graduate School, University of Pennsylvania. Fourth Edition, thoroughly revised. 12mo of 616 pages, 212 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$3.00 net.

An interesting book of some 600 pages with 262 engravings which for the greater part have been made by the author. It is a book more for the general practitioner and the beginner in the specialty of eye, ear, nose and throat, than for the advanced student or specialist.

The first portion deals with the examination of the throat, larynx, nose and ear, tells how to make this with the least discomfort to the patient, mentions the most satisfactory objective signs to the examiner, the proper instruments to use and how to use them.

Anatomy, physiology and pathology are given in a few pages to prepare the reader for a better understanding of the diseases relative to the parts which follow. This feature will be found preceding each chapter dealing with the nose, throat and ear. If a relatively new anatomic discovery has been made, it has been given some consideration, but not undue prominence, as it is apt to be discarded later on as "medical junk".

Treatments other than surgical are given the most careful consideration, as the beginner is more apt to attempt a cure by local applications than by surgical means. Operations given special attention are those which have been tried and proven for some time and not those which are new, or those which are complex in technic. They are chosen to help the beginner rather than confuse him. Conservatism is the author's chief motto, in both a medical and surgical way. In his operations, he is careful not to do too much, especially in the radical mastoid operation and in the sinus cases. Quite frequently the cure is worse than the disease.

The last half of the book is devoted to diseases of the ear, and in the concluding part of this the vestibular apparatus is dealt with in some detail.

The formulas given in the last chapter are arranged with the special purpose of making them easy to find. This chapter includes local anesthesia, what anesthetic to use and how to use it for the best results, also climatology, hemostatics, hypnotics, lozenges, gargles, sprays, dusting powders, etc.

The book should be on the desk of every practitioner who attempts to do any special work along this line.—E. E. McK.

A Manual of Gynecology: By John Cooke Hirst, M.D., Associate in Gynecology, University of Pennsylvania; Obstetrician and Gynecologist to the Philadelphia General Hospital. Twelve mo.

of 466 pages with 175 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$2.50 net.

This manual is a wonderful accomplishment in medical literature, for, although unattractive and unalluring in style and arrangement, it contains the information on the subject in the most concise form possible, and deserves the highest praise for the accomplishment of what was intended by the author. The subject of gynecology has been treated without a single omission and also without any unprofitable discussion. A notable feature of the volume is that in many sections it deals with the subject from the standpoint of the obstetrician as well as the gynecologist. Leucorrhea has been given special attention and dealt with as a symptom and not a primary disease, which is undoubtedly correct. This is a very important chapter, because leucorrhea is one of the commonest disorders with which the gynecologist has to deal, and one which practically all text books skim over very briefly.

Another especially commendable feature of this manual is the chapter devoted to x-ray, electricity, radium, mesothorium and the Finsen light. And while these subjects are all to be found in the literature, they are so scattered that it would consume days, possibly, to gather the information which may be found here in a few minutes. We are given here the different currents of electricity, properties, application, indications and contraindications, fulguration, etc. The subject of radium is discussed in like manner. This is an excellent text book for the student, and would serve as a means of a handy, quick review of the experienced gynecologist.—L. J. W.

The Medical Clinics of North America, New York Number. Volume II, Number I, July, 1918. Published bi-monthly, W. B. Saunders Company, Philadelphia. Price per year: Paper, \$10.00; Cloth, \$14.00.

This number consists of ten clinics, four contributions and one clinical lecture, presented by fifteen of the foremost physicians and pathologists of New York City. The material utilized in its compilation was obtained from Cornell University Medical College, the laboratories of the New York City Department of Health, College of Physicians and Surgeons, Columbia University, Bellevue Hospital, Otisville Sanatorium, Mount Sinai Hospital, Fordham Hospital, City Hospital, Post Graduate Medical School, Willard Parker Hospital and Montefiore Hospital. No previous number of the Medical Clinics of North America excels this one, for it contains a wealth of valuable information presented in a practical and clear manner. Subjects of recent developments, such as practical immunization against diphtheria, hemorrhagic diseases and the acetone body acidosis in children are described in an instructive and exhaustive manner.—J. L. M.

The next meeting of the Colorado State Medical Society will be held in Denver, October 7th, 8th and 9th. Members having papers to offer for the scientific program should send their subjects to the chairman of the Committee on Scientific Business, Dr. Edward Jackson, 318 Majestic building, Denver.

Colorado Medicine

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Editorial Comment

ANOTHER EX-EDITOR.

In our democratic changes, attention is liable to be centered entirely on the new official. It would seem reasonable to give some honor to the outgoing official who has performed his duties in an acceptable manner. There is especial reason to do this with reference to retiring editors of Colorado Medicine, for they have not been old men whose work was done, but among those from whom valuable service was still to be expected.

Dr. William H. Crisp manifested in his work as editor, enthusiasm, conscientious appreciation of its importance, and high literary taste and standards. It may be truly said that our journal was well edited during his incumbency.

It would seem proper when a good workman has become efficient to keep him on the job. But this we cannot do with our editors of Colorado Medicine. The salary that can be paid its editor by a state medical society of less than one thousand members is too small to compensate for the labor and effort. We have to pay partly by the educational opportunities we give him; as hospitals pay their interns and pupil nurses. When he has learned what he can from the work, we have to let him go. The editor who could be kept permanently on such a salary would probably not be worth keeping.

But when an editor becomes an ex-editor we should not lose him entirely. The ability it was worth while to acquire is worth keeping up by exercise. He is still a member of our society and interested in its future. We

have reason to look forward to many more contributions from his trained pen; albeit he has earned the right to "take it easy" for a time. One who has learned to write well must still find enjoyment in exercising his powers, and we may hope that Colorado Medicine will still profit by contributions from its new ex-editor.

E. J.

THE STANDARDIZATION OF HOSPITALS.

Most members of modern society are at one time or another in their lives either inmates of hospitals or at least in a position to benefit by the facilities which hospitals do or should afford. Broadly considered, the hospital is almost as essential a public institution as the elementary school. Health is even more requisite than education, and hospitals are not merely a luxury but a necessity.

Hospitals are unfortunately run chiefly by private enterprise. They may, however, as Bowman has well said, be properly regarded as public service corporations.

Whether hospitals are under private or public control, they must in the main be supported by the general public; and those who provide the funds have a right to demand that the money shall be spent in the best possible way.

For years past committees have from time to time been appointed by such organizations as the American Medical Association, the American Hospital Association, and the Clinical Congress of Surgeons to study the important problem of hospital standardization; but the subject was so complicated and difficult that almost nothing was accomplished. The first great move for con-

certed action was made in October, 1917, when, under the auspices of the American College of Surgeons, prominent surgeons and internists, hospital superintendents, presidents of two large hospital associations, and editors of leading medical and hospital journals met in Chicago. It was announced that the American College of Surgeons had been provided with about sixty thousand dollars to be spent in an effort toward standardization.

As a result of the Chicago meeting an advisory committee of twenty-five was appointed, consisting of the officers of the American College of Surgeons, nine surgeons, five internists and laboratory men, four hospital administrators, the President of the American Hospital Association, the President of the Catholic Hospital Association, and one representative from each of the army, navy, and public health services of the United States Government. It was further planned that the hospitals of the country should be inspected by trained men working in relation to a questionnaire prepared by the general committee of twenty-five; and that the results thus obtained should be tabulated and published under the auspices of the American College of Surgeons.

This campaign was among the matters in which the war was responsible for delay. The meetings recently held in Denver, and addressed by the French surgeon Dehelly, by Director Bowman of the American College of Surgeons, by the President of the Catholic Hospital Association, and by a number of Colorado physicians, were a part of the general campaign to stir up the whole country on this important subject.

There are those who feel that the mere classification of hospitals may be capable of accomplishing just as much good as has been realized from the classification of medical schools. It is to be feared, however, that the hospital problem is so much more complicated than that of medical education that it will be difficult to arrive at the necessary unity of action and thus at the relative perfection which is desired.

What should we demand of a modern hospital? It ought to be fire proof, sanitary, and thoroughly equipped in such mat-

ters as cuisine, laboratory, and x-ray. But it must be much more than this. A hospital is not merely a hotel for the sick. It must be attended by a medical and surgical staff which is above reproach in every respect. It must have an adequate force of efficient nurses. It should provide a proper training for medical interns and also for undergraduate nurses. It should serve as a basis for thorough statistical study of the diseases treated and the methods employed within its walls; a purpose which can only be accomplished by the keeping of careful records of all its patients.

As was emphasized by Wilder at the Chicago conference, it is useless to demand that medical graduates shall add to their training a compulsory hospital year before being licensed to practice, unless we acquire such medical control of hospitals as will insure that a hospital internship shall not be a farce but a means of real scientific education.

The average hard-worked intern is to a large extent a mere handy man around the hospital. His opportunities for training depend in great measure upon the whim of the visiting physician.

In similar fashion, the pupil nurse is not usually employed by the hospital for the altruistic purpose of providing her with an education, but rather as a form of cheap labor, from whom as much as possible is to be derived, and to whom as little as possible is to be given in return. In this respect, the undergraduate nurse is a relic of the old apprentice system. In improving the hospital, far greater attention must be given to the education alike of nurses and interns.

The standardization of hospitals requires the standardization of physicians. It is demanded by the American College of Surgeons that no physician or surgeon shall be allowed to practice within a hospital unless the governing body of that hospital is satisfied as to his efficiency and also at the same time as to his professional integrity. The College insists on the absolute exclusion from hospital relations of the practice of fee-splitting, which Bowman defines as the practice of buying and selling sick people on the part of the doctors, and which he rightly argues makes for unnecessary sur-

gery and for incompetent medical and surgical service.

It is not unlikely that the efforts to standardize hospitals will, as regards professional relations, provoke a good deal of dispute among the doctors themselves. Since the practice of fee-splitting is already illegal in fifteen states of the union, and since in polite medical circles it is more and more being regarded as taboo, it is not likely that the standardization of those physicians who work in hospitals will be opposed openly upon the ground that fee-splitting should be permitted. But it will be argued that no group of men should have a corner on hospital service while others of their professional brethren are excluded.

This brings us back after all to a fundamental principle in the practice of medicine, namely, that whatever is improper inside the hospital is objectionable anywhere; that the man who is not qualified to do surgery or treat internal or special diseases in the hospital should be excluded from such practice in his office or in the home. In other words, we must not license to practice anyone whose general medical education is deficient; and we must not allow anyone to lay claim to special knowledge unless he possesses it. We must standardize not only the hospital, but the general surgeon, the internist, the oculist, the rhinologist, the orthopedist, the pathologist, and the rest. Some day, too, we shall probably require that no man shall continue to practice medicine or his specialty without demonstrating at regular intervals that he is abreast of the times in professional attainment. W. H. C.

PATENTS IN DRUGS.

There was a time when the use of bread as a human food was unknown, when glass was unheard of, and when such a familiar object as the ordinary wheel had not become a part of the life of man. Yet all three of these are today regarded as common necessities of life, and their unrestricted production, sale, and construction are commonplace of our existence.

In somewhat similar fashion, certain drugs, once discovered, soon become in the ordinary sense necessities for the sick. How

should we manage without morphine or one of its derivatives, without quinine, or without mercury? In the treatment of syphilis salvarsan is now for some purposes more essential than mercury. In the world of bacteriology, there are a number of dyes without which we should be helpless.

Surely it is undesirable for the patent laws to give anyone unrestricted control of the price at which such indispensable products are to be disposed of to the public. In this respect the great war, although for a time it inflicted considerable hardship, has now resulted, in this country at least, in a significant change for the better. About four thousand five hundred patents covering various chemical processes and products, registered in the United States by Germans and other enemy aliens, have been purchased from the Alien Property Custodian by a corporation organized by him and known as the Chemical Foundation, Inc., which will in turn issue without discrimination nonexclusive licenses to any American manufacturer who may apply therefor; and under the terms of these licenses such American manufacturers may use or make the patented processes and products on a moderate royalty basis.

Under the rapidly changing conditions of modern life, many inventions which were for a while novelties and luxuries rapidly became almost a necessary part of the life of the individual, the family, or the community. Bearing in mind the fact that most inventions are really the gradual result of the labor of many minds rather than merely of the particular one to which they are finally and popularly credited, it might be well to consider whether the patent laws should not be so modified as to insure that their working will not victimize the public by establishing monopolies or undesirably high prices in connection with any new feature of our rapidly evolving civilization. While it is desirable not to sacrifice an adequate financial incentive toward the development of new ideas, it may well happen that the action taken by the Alien Property Custodian with regard to patents formerly in the hands of enemy aliens will point the way to far-reaching general changes in patent law. W. H. C.

Original Articles

THE DIAGNOSIS OF FRACTURES OF THE SPINE.*

JOHN B. HARTWELL, M.D., F.A.C.S., COLORADO SPRINGS.

One reason that fractures of the spine are reckoned of such rarity (Stimpson's series: one half of one percent of total fractures) is that the fallacious teaching that fracture of the vertebral bodies is usually accompanied by paralytic symptoms is still general. The common statement is that in two-thirds of the cases signs of medullary injury are to be expected. From a considerable experience, I am convinced that such figures are fallacious and that the misunderstanding is the result of ignorance as to the means by which the fractures of the vertebrae are produced and as to the means by which a positive diagnosis can be made.

Since the means by which they are caused differ, it is convenient to divide fractures of the vertebrae into two classes: fractures of the vertebral bodies (compression fractures) and fractures of the vertebral arches and processes.

The former class result from indirect violence, but the process fractures almost invariably are due to direct trauma. The usual mechanism in the production of a compression fracture consists in a sudden, acute hyperflexion of the spine, secondary to a force applied at one or the other extremity of the column. By this jack-knifing, the cancellous vertebral bodies are made to bear unwonted strain, and they crush. If the force continues, the inelastic bony posterior arch cracks, and lastly the more elastic intervertebral ligaments give way. The mechanism is the same whether it be the classical diving accident in which the head is sharply flexed forward on hitting bottom, or whether a weight falls on the shoulders, causing a sudden flexion of the spine, or whether the patient falls from a height and lands on his feet or buttocks while the body above is sharply buckled, or whether it is

the "low bridge" accident or "cave in", or the turn-turtle automobile accident.

Though the sum total of motion between the spinal segments is considerable, the motion permitted between any two vertebrae is very small. The freest motion is permitted between the third and sixth cervical segments and in the region of the last two dorsal segments. These two situations being points at which fixed and movable segments of the spine join each other, forces applied to the spine are here concentrated, and hence the majority of fractures occur in these two regions.

The spinal cord hangs loosely suspended in the spinal canal. Continuous with the medulla above, it terminates opposite the second lumbar vertebra and is anchored along its course by the spinal nerve roots. When the spine is sharply and suddenly flexed various accidents may happen to the cord: it may be stretched; it may be bruised; it may be crushed. In the latter two instances, the pinching of the cord occurs between the upper posterior margin of one vertebral body and the lower margins of the laminae of the vertebra above. But in any case the trauma to the cord is synchronous with the fracture of the vertebrae. The damage done, the recoil follows, and bone pressure on the cord is released unless the crush of the vertebral bodies, with secondary displacement, has been so great as to narrow the spinal canal to a diameter smaller than its contained cord. Too great emphasis cannot be placed on this fact: that the damage done the cord is as primary as the damage done the bone. The medullary injury is immediate in the vast majority of cases, not of gradual onset as some writers lead us to infer.

As contrasted with compression fractures of the vertebral bodies, which I have tried to show are the result of indirect force, fractures of the processes, particularly of the transverse processes, are caused by direct force. In the cervical region the transverse processes are too short to receive the force of a blow; in the dorsal segment of the spine, the backward bowing of the ribs exposes them to the force of blows, while at the same time it protects the transverse

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

processes; but in the lumbar region the transverse processes are long and slender and unprotected. And it is in the lumbar segment of the spine that fractures of the transverse processes are not uncommon but are frequently overlooked.

A second fact on which, I believe, far too little stress has been laid is that the force that causes vertebral fractures is so great that in at least one-third of the cases other severe injuries than the spinal fracture are inflicted on the sufferer. Among these may be mentioned skull fracture, fracture of the sternum and ribs, with and without lung puncture and hemothorax or rupture of liver and kidneys, and fractures, simple and compound, of the pelvis and bones of the lower extremities.

In many instances, and especially where no paralyses are present, these complicating injuries are at once apparent and, the patient being in a condition of "shock", no thought of the possibility of vertebral fracture enters the examiner's mind at first and if later the patient complains of backache, his complaints are not heeded enough to give his back an examination and he is appeased by being told that "he ought to expect a backache after the jolt that he got".

Of subjective symptoms of spinal fracture, backache—common uninteresting backache—is the chief. This backache is well localized and absolutely constant, and does not radiate. It is exaggerated by any motion that changes the line of weight of the body. Rising from the recumbent to sitting position or from the sitting to the erect position increases the pain, but in no position is pain actually absent. Flexion and hyperextension of the spine are most carefully avoided, though the pain caused thereby is only momentary. And the second characteristic of the pain of a fractured vertebra, whether a compression fracture or a process fracture, is chronicity. It persists unabated for months and even for years. Another subjective symptom is weakness of the back, though this is less constant than the pain.

In the diagnosis of spinal fracture, whether compression fracture of the body or process fracture, localized tenderness is by far the most common sign, as it is the

most suggestive and most reliable sign in fractures of the long bones. In compression fractures the tenderness is over one or more spinous processes; in process fractures it is lateral to the midline. It is a never-failing sign.

A second valuable and most constant sign in compression fractures is disalignment of the spinous processes. This disalignment is not apparent to sight but is perfectly apparent to touch, and is due to the fact that in the majority of compression fractures the impact of the bodies is not a central one and rotation of the spine at the site of fracture results. Therefore, below the site of fracture the palpable tips of the spinous processes will be in a line which is broken at the site of fracture, and the spinous processes at this site sharply deviate to one side or the other, not a great distance but a distance great enough to be readily apparent. If in addition to the compression there is dislocation, a variation from the normal in the depth of the spinous process may be apparent.

Where both localized tenderness and disalignment of the spinous processes are present, I feel that we have pathognomonic signs of compression fracture that can only be excluded by absolutely satisfactory x-ray plates.

This disalignment of the spinous processes should be given the place in diagnosis that the text books give to the elusive kyphos. Of course, in the typical, classical case with paralysis, it is easily seen, but my effort is to facilitate the diagnosis in the cases now usually overlooked. In the former type of case a kyphos is expected; less sharp than in Pott's disease, but still an easily observable kyphos. Such, however, is not always the case. The kyphos in ambulatory compression fractures is often so slight that it may readily be classified as bad posture. The exaggerated upper dorsal curve seen in moderate round shoulders is the typical kyphos in fractures of the upper dorsal spine, while in the dorsolumbar region, instead of a kyphos, the concavity of the lumbar curve is lessened or obliterated, giving rise to the flat back seen in many postural strains. In the mid-dorsal region, however,

the knuckle is evident and should give the clue to the correct diagnosis.

In any suspicious case the correctness or incorrectness of the diagnosis must be finally decided by satisfactory x-ray plates, and that means both anteroposterior and lateral views. In old cases callus formation at the fracture site in anteroposterior views often gives shadows identical with the common hypertrophic changes seen in so many spines. In point of fact, "hypertrophic changes" was the report returned to me in several cases by an expert radiographer on the strength of the showing of anteroposterior views. In fresh cases, the diminution in the height of the damaged vertebrae or of the disc interposed between them as compared with the normal bones above and below, may be impossible to detect in anteroposterior views, but the lateral view will demonstrate unmistakable deformity at a glance. Except in the mid-dorsal and low lumbar regions where either the scapulae and heart or the alae of the ilia are interposed, satisfactory lateral views are very easy to obtain. In the latter situation an oblique view may have to be substituted for the lateral, though this has been rare in my experience. Where the suspicion is of fracture of a transverse process alone, anteroposterior x-rays are of course sufficient.

In conclusion let me again emphasize the fact that compression fractures are caused by hyperflexion of the spine and process fractures result from direct violence; that sharply localized, constant pain at the site of fracture is the most common subjective symptom; that localized tenderness with a disalignment of the spinous processes at the same level is a pathognomonic sign of compression fracture, and that confirmatory x-ray plates must be taken in the lateral as well as in the anteroposterior positions.

When patients who complain of backache following accidents are carefully and completely examined as is here suggested, the diagnosis of fracture of the spine will become not uncommon and the diagnosis of contusion of the back, sprain of the back and rupture of the interspinal ligaments will be less frequent, just as the diagnosis "nervous dyspepsia", so common a few

years ago, with a more careful study of our patients made possible by advances in roentgenologic technic, has now become rare and cases of ulcer of the stomach and duodenum, chronic appendicitis and gall bladder disease are much more frequent.

DISCUSSION.

P. J. McHugh, Fort Collins: The paper just read by Dr. Hartwell, I think, is a most excellent one. It points out the danger of overlooking a fracture of the spine in our enthusiastic haste to attend to other serious injuries occurring in the same person. It also points out the danger of calling simple injuries mere muscular difficulties when a more careful examination will show that a fracture of the spine exists.

Fractures of the spine of slight severity without injury to the cord are the ones that give us the most concern as to diagnosis. Marked displacement renders the diagnosis easy as does also injury of the cord. The cord may be injured when a fracture does not exist, but symptoms of the presence of cord injury are *prima facie* evidence of a fracture. In all injuries which result in fracture of the sternum we should suspect fracture of the spine.

George Woolsey (Vol. II, Keen's Surgery) refers specifically to cases similar to those discussed by Dr. Hartwell in his paper. We may quote Wagner and Stopel on "Sprains and Contusions of the Spine Without Involvement of the Cord", as follows: "Only 0.71 per cent of all injuries involve the spinal column and in one-third of these the cord escapes injury. The many joints of the spine with their numerous ligaments as well as the ligaments between the laminae and spinous processes and the surrounding muscles help to explain the strength of the spinal column and its resistance to injury. Excessive movements of any kind, carrying heavy loads or the too sudden strain of lifting heavy loads, produce sprains which are the first stage of a dislocation or a fracture of the spine. The more severe sprains frequently lead to the over stretching of the cord, but it must be evident to any one familiar with the strength of the anatomical make-up of the spinal column and its ligaments and muscles that it takes considerable violence to produce a fracture or to injure the cord."

Painter and Osgood collected eighteen cases of rupture of the spinal ligaments without fracture or dislocation. The force which produced them was generally a hyperflexion of the spine, but of a degree less than that which would be likely to produce a fracture. They mentioned the fact that when there is much swelling, it is often impossible to differentiate between a severe sprain and a fracture. I think Dr. Hartwell's point is well taken when he states that a disalignment of the spinous processes in connection with local tenderness in the area is pathognomonic of fracture, but it is often difficult in the presence of such swelling to make out such disalignment. In fracture of the processes, disalignment is always found; also local mobility and perhaps crepitation.

Here the x-ray comes into play as it should in all fractures and is the deciding agent. I am of the opinion that the x-ray should be used in every case of injury involving bones. Recently I was called to examine a little girl's arm. She fell, not very violently, however, striking on the right shoulder and upper arm. There was some pain

and tenderness over the lower end of the deltoid. There was no swelling and the bone was easily examined, she being a spare, thin girl. There was no mobility at the point of tenderness, nor was there any crepitation and I passed on the case as being a simple bruise. Five days later her father told me she was still suffering with the injury and that she could not lift her arm from the side. I had an x-ray taken of it and to my surprise it showed a fracture line more than two-thirds across the bone. It was green-stick in type, but might have gone on to recovery or damage of a serious nature but for the x-ray.

H. P. Brandenburg, Denver: I can only take up the x-ray side of this paper. The findings of fracture in these cases of injuries to the spine are very interesting, and it is very common to find fractures in people who have been in automobile accidents. I see many of these cases at the County Hospital in Denver. I should say sixty percent of them were injuries of the spine with a diagnosis of fracture. The cord symptoms are entirely lacking, yet there is a fracture of the laminae or of the lateral process of the vertebra. It is a much more common fracture than it was supposed to be a few years ago. These fractures of the spine are found by careful x-ray technic, and there are lots of fractures of the spine which I am satisfied a few years ago were overlooked. I consider the paper a very excellent one.

F. H. McNaught, Denver: I only regret that Dr. Hartwell did not go on with the treatment of fracture of the spine. It seems to me that would be the real terminus of such an interesting paper. It is really the results of these fractures that we are looking forward to, and the symptoms have been so thoroughly marked out that it hardly seems necessary to discuss them. Dr. Brandenburg has brought up the fact that there are quite a number of fractures of the spine being found today without these well marked symptoms accompanying the fracture. That would be a very interesting point to consider along with the treatment. It has been my experience to have seen twelve cases of fracture of the spine, having them either come directly under my care or indirectly so with others. I have operated on four or five cases. I am frank to admit that the cases not operated on stand practically the same chance for recovery as those that are operated. I think a greater number show recovery without operation than those that have been operated on. I also feel that many of these cases that heretofore have been called fractures have been cases of hemorrhage and gave us many of the symptoms that we get with a fracture. Of course, where you are so situated that you can use the x-ray it will clear up the subject and eliminate the question of hemorrhage or fracture. But I feel in all these cases, from experience and reading, that we cannot be too careful in making a diagnosis of fracture of the spine. We must eliminate hemorrhage which, in the large percentage of cases, is absorbed and clears up and the patient gets well. It is not a simple thing to do a laminectomy. It is not a simple thing to open up the spinal canal and correct traumatism. The last case I saw was a rather interesting one. Some of the symptoms laid down by Dr. Hartwell were lacking. This case I saw about a month ago at Plattsburg Barracks. A young soldier had gone to Lake Champlain and, in diving from a certain point, not being aware of the depth of the water, struck a rock with the top of his head. No traumatism was produced to the scalp or to the skull, yet he received a complete fracture of the fourth cervical vertebra, which to me was astonishing. What impressed

me was the lack of symptoms, yet the man had a most extensive fracture. There was partial paresis on the right side. There was very little pain without movement. The head could be rolled slightly, and yet not much pain was produced. There was always pain on local pressure as the doctor emphasizes. I am inclined to the opinion that we should always get pain from local pressure over the seat of trouble, yet in this case it was astonishing the amount of pressure the man could bear compared with the traumatic condition found at the postmortem examination. This man lived for three weeks. We did not consider it proper to operate. His people lived at a distance in the south and they rather advised against it, so that we were hardly at liberty to act on our own judgment. Postmortem examination showed a fracture of the laminae and body of the fourth vertebra. The body was compressed considerably. There was much hemorrhage about the cord. The cord was traumatized and cut, and yet there was only right-sided hemiplegia in this case. The fact that he lived so long gave us some encouragement that he might possibly recover, but he developed pneumonia and died. As I have said, the postmortem revealed a condition you would hardly expect from the symptoms we obtained.

I feel in all these cases great care should be used in obtaining the symptoms, to eliminate hemorrhage, and then consider whether the man does not stand a better chance of recovering without operation than he would with an operation.

Dr. Boyd: What was the treatment?

Dr. McNaught: Not a thing. He lay perfectly flat on the back. We thought of putting on extension, but the man was let alone and kept very quiet, and suffered very little.

J. C. Chipman, Sterling: I would like to emphasize the importance of making an x-ray examination in all these cases. I have never seen in my practice but one case of fracture of the spine, and that was a man who had a badly bruised ankle at the time. In two weeks he was at work. So far as I could ascertain, there were no symptoms of this injury whatever. After working about six weeks he fell into the hands of another physician, and in four months thereafter I was called to the case again, and with an x-ray plate we discovered he had a fracture of the sixth dorsal vertebra from the effects of which he finally died. It is absolutely necessary, if possible, to have an x-ray examination of such cases and have it early in all these back injuries.

Dr. Gilbert: How did it kill him?

Dr. Chipman: Dr. Freeman can tell you more about the case than I can. After he came back into my hands his symptoms then were those of nervousness. I had Dr. Pershing see the case, and we decided to have an x-ray plate taken immediately. I refused to take charge of the case unless we had a specialist. An x-ray examination was made and showed this fracture. Dr. Freeman operated on the man. He finally died from paralysis and from the effects of bed-sores that go along with these cases. He was injured the first day of September, and died the latter part of May in the following year.

Dr. McNaught: The doctor brings out one point I wish to emphasize. I feel from experience and reading that if an operation is to be done on these cases, it must be done early, especially in those cases where the cord is compressed. Where degeneration has gone on and pathological conditions have taken place, an operation does very little good.

G. A. Boyd, Colorado Springs: I would like to have Dr. Hartwell give us some plan of treatment

for fractures in the various areas of the spine. I feel that many of us have not had such a large experience with these fractures as Dr. Hartwell. Anything he might say on the subject would be of great benefit to us. I would like him to discuss the questions of paralysis from compression and from hemorrhage, and localization, and differentiate between hemorrhage and fracture, because I think he has decided opinions on those points.

A. L. Burnett, Silverton: Dr. Hartwell's paper is very interesting to me as I have now under treatment or observation two cases of fracture of the spine. Being in a mining and industrial center, we see a great many of these cases, and during the past two years I have had three or four cases of fracture of the spine. I have now one youngster, five years of age, who in playing fell out of a small wagon backwards and struck the back of his head against the ground. His mother brought him to the hospital. X-ray plates were taken immediately, both anterior and posterior views. They showed a complete fracture of the body of the fourth cervical vertebra and a breaking of the process and lamina on the right side of the third cervical vertebra.

As to the treatment of these cases, my observation has been that it is best not to operate. As Dr. McNaught has said, patients do not get along as well under operation as without it.

I have a patient in the hospital who has been there for nineteen months. He was operated on forty-eight hours after a fracture in the lumbar region.

Going back to the case of the youngster, there was a strain upon the cord, but there was no paresis or no paralysis whatever. We are using extension in this case; the child is able to be up and around, playing, and I believe nature in time will bring about sufficient union of these bones to take care of the cervical vertebra, and the child will completely recover. The accident occurred about three months ago. The child has some movement of the head laterally, but very little forward and backward.

Another case was one of fracture of the first and second lumbar vertebrae. The man was a miner. While working in the mine, a rock weighing a ton and a half fell from the side wall of the stope and struck him, crushing the spinous processes in the first and second lumbar vertebrae, also the laminae. There was very little bruising where this rock struck him. There was not any pain, but the cord was severed completely, producing paralysis from the waist-line down. Upon opening and doing a laminectomy, removing the crushed pieces of bone and suturing the spinal cord together as best we could, getting the parts in fairly good position, closing the membranes and removing the blood clot, there was healing by primary union in ten days. This patient was unconscious for four hours due to the shock from crushing of the cord. He is a young man, twenty-seven years of age. His back is quite strong; he can sit up, but cannot use his legs. He had symptoms for the first three months which led me to think that possibly there might be a little union, and among these symptoms was pain shooting down the legs. But since that time I have concluded it was nothing more nor less than the degenerative process of the end of the spinal cord where it was severed.

Another case was a man forty-two years of age seen within the last two years. He fell downstairs and by the indirect violence produced a fracture of the fourth and fifth lumbar vertebrae and the lamina of the fourth, producing some

paralysis, also straining the cord. He had paralysis of the right side which lasted for a period of four months. This man was able to get out and go about. He was in Denver. He saw Murphy and many other surgeons, and I believe Murphy was the only one who did not recommend operating on him. This was about two years ago. That fellow is now traveling for the Johnson and Johnson house. He was in my office last month and showed me what improvement had taken place, how well he could walk and get around. All that was used on him was extension, steel wire overhead extension. As the doctor has said, I think a great many of these minor injuries of the spine, with fracture of the spinous processes or laminae, or cracking of the vertebrae proper are overlooked, and in all spinal injuries I insist upon an x-ray examination being made immediately, both anterior and lateral views. Due to the formation of the spinal column, it is very hard upon palpation to elicit crepitation.

O. M. Gilbert, Boulder: I think it would be well to mention another point of view in connection with these cases and how they may fool us on account of the manifestation of neurasthenic symptoms.

A woman was sent to me from Erie about two months ago with marked neurasthenic symptoms. Incidentally, she had some backache. I was almost completely fooled about her case. Because the neurasthenic symptoms were so prominent and because backache commonly enters into the history of these cases, I was not convinced until I came to make a physical examination that the symptoms were not wholly neurasthenic. She complained of the classical neurasthenic symptom of pain at the base of the brain. This pain was exaggerated upon movement in any direction. She was easy when lying down. When I examined her I found that the spinous process of the second lumbar vertebra was not in perfect alignment and was distinctly and persistently tender upon manipulation. The x-ray revealed a crushing of the body of the second lumbar vertebra. I sent her down to Dr. Packard. He did not consider the condition of sufficient importance to put her in a jacket, and merely advised posture and rest, because the injury was of minor degree.

I came very near being tripped up on that case because of the prominent neurasthenic symptoms. I later learned that she fell on the ice last winter, and evidently the superflexion of the spinal column was sufficient to produce this minor degree of crushing of the lumbar vertebra.

E. H. Robertson, Boulder: I would like to ask Dr. Hartwell whether he mentioned the point that such a fracture might be produced by muscular effort on the part of the individual?

There was a specimen in the pathological laboratory at the University of Colorado which showed a fracture of the cervical vertebra which was produced through muscular effort of the individual. The patient was a young man doing gymnastic work in the Y. M. C. A. in Denver, and while doing some stunts he broke the cervical vertebra from his own muscular efforts. Dr. Hartwell's pressing the point so much that the fractures were due to injury is why I mentioned the above case.

Dr. Hartwell (closing): I think the members of the society are to be heartily congratulated on having spotted so many of these obscure cases of fracture of the spine.

Dr. McNaught in discussing my paper spoke of the difficulty of finding disalignment on account of swelling. The spinous processes, like the clavicle, are so well marked and so easy to

find that, regardless of any amount of swelling which I have seen, it has always been perfectly easy to palpate the tips of the spinous processes to distinguish the disalignment. Even where huge hematomata are present, you can go through the soft hematomata and palpate the spinous processes.

Dr. McNaught spoke of hemorrhage into the spinal cord and urged against performing laminectomy. Taylor showed some years ago where a fracture occurred that there was not only hemorrhage into the cord at the site of compression of the cord, but that in very many instances there was hemorrhage into the cord at a considerable distance; that in fracture of the lumbar vertebrae there were found both in the dorsal and away up into the cervical regions slight hemorrhages into the cord. The big ones opposite the site of fracture are caused by the pinching of the cord at the moment that the spine is hyperflexed, and Dr. McNaught says rightly that it is possible to get a hemorrhage into the cord, a traumatic hematomyelia, without a fracture of the vertebra. Such, however, I think must be a very rare accident. In the same connection Dr. Boyd has asked me to speak of pressure from hemorrhage.

The brain is closely surrounded by a plate of bones. A very small edema or swelling or hemorrhage beneath the dura or between the dura and the skull will give signs, and perhaps alarming signs, of cerebral compression. The spinal cord occupies hardly one-third of the contents of the spinal canal. In cases of fracture there is almost invariably hemorrhage into the spinal canal. I feel very strongly that in practically any hemorrhage in the spinal canal, with the free transit of blood up and down, it is not to be held responsible for pressure symptoms on the cord. Pressure symptoms on the cord may be produced by hemorrhage within the spinal cord, that is, a traumatic hematomyelia. I believe they are never produced by hemorrhage between the bony wall of the spinal canal and the dura.

A very simple way of making a diagnosis and giving us a line as to the extent of hemorrhage in the spinal meninges would seem to be by lumbar puncture. I studied a large series of cases, and lumbar puncture was not done particularly frequently, with this result: if blood is recovered on lumbar puncture, it shows that there has been hemorrhage into the spinal meninges; hemorrhage may occur, however, in the spinal meninges without giving bloody fluid on lumbar puncture, so that procedure, which would seemingly be of aid in determining the extent of hemorrhage, has proven in a very small number of cases not to be particularly reliable.

As to treatment in the cases which showed no signs of cord injury, I think no one should consider anything more than supportive measures. If there is deformity, and the case is seen early, extension might be made and quite correctly made to correct this deformity.

With a personal communication from Dr. Rockey, of Portland, Oregon, he has sent me beautiful x-ray reproductions before and after reduction of fractures in the cervical region. In two cases there was marked deformity. The deformity was absolutely overcome. The general teaching is that if the signs are of a complete transverse myelitis, operative measures will do no good. If the signs are of incomplete, but, at the same time, of a partial myelitis, operation is indicated. It has been my experience that it is impossible to tell whether you have a complete or incomplete myelitis from the primary examination. A nerve may be stretched for relief of painful

stumps, and in various conditions where pain is a prominent symptom. In the same manner I think the cord, as the result of the acute hyperflexion, may be stretched and partially paralyzed, so that at the primary examination you may have complete abolition of all reflexes, superficial and deep, and complete abolition of all sensation with sphincteric retention (the classical signs of a complete transverse myelitis) which in the course of several days, by improving, regaining control of the bladder or of the rectum, will demonstrate that our first examination and the results drawn therefrom were faulty. No cord has been completely crushed and, sutured or not sutured, regained its function. There is one case reported of suture of the spinal cord with recovery of some function which leads every one to arguing on regeneration of the spinal cord. I think the general feeling is that improper deductions must have been drawn because the process has not been successfully repeated. Early suture of the roots of the cauda equina may be followed by a more or less complete regeneration. Where improvement occurs in cases that have cord injuries, it cannot be expected in my experience before the fifth or sixth day. If some improvement, at least slight improvement, has not occurred within ten days, in my experience it is rare to have any improvement follow at a later period.

Dr. Burnett spoke of a patient who, following a fracture of the spine, was in extreme shock. According to a recent article by Ransohoff, his experience coincides with mine, that shock in pure fractures of the spine, regardless of the extent of the cord destruction, is not to be expected, and I have always felt that where a man had an obvious fracture of the spine and was in a condition of shock, there must have been some complicating injury. In the case described I think it is suggested at once that the man fell and landed on his head. He may have had a fracture of the skull which accounted for his shock. Rupture of the viscera, the liver or kidney, in the cases I reported, was found only at postmortem. It was not discovered during the life of the patient.

Another thing which I find, and my experience agrees with the gentlemen who reported cases, is that the cases presenting complete transverse myelitis have muscle twitchings which follow early. I used to think these patients were going to get well or show improvement in spite of everything. I now believe these twitchings are the result of degenerative changes, and that they are a sign of ill rather than of good omen.

WORK OF THE ARMY TUBERCULOSIS BOARDS.*

O. M. GILBERT, M.D., BOULDER.

Early in the course of the participation of our country in the world war, it became evident to the medical department of the army that something must be done to prevent the repetition of the deplorable experience of our allies, particularly France, in regard to tuberculosis. That country alone

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

returned from the front during the first year of the war approximately one hundred thousand cases of active tuberculosis, and we are assured by our Dr. Livingston Farrand that this was not due, as had been rumored, to the enemy having inoculated large numbers of prisoners with tubercle bacilli; in fact, in the light of our present understanding of tuberculosis, this would be highly improbable on the face of it.

When we realize that each sick soldier requires on an average two people to care for him, we can readily see what an enormous drain upon the efficiency of the army it would mean, if we were to repeat their experience.

The element of danger of infection of other soldiers has undoubtedly been overestimated, but on the other hand this cannot be wholly ignored, especially since there are many young men now in our army who are not over eighteen years of age.

The main danger, obviously, is that, under the stress and strain of trench life, the old latent or semilient infection will be lighted up and an active and progressive tuberculosis result from what might otherwise have remained a relatively harmless infection.

This would evidently be unfortunate from the standpoint of the government as well as of the individual. The government, realizing that it is not possible for the regular military medical examiners, in the haste and confusion of a general examination, to exclude other than marked cases of tuberculosis, appointed some twenty-eight tuberculosis examining boards whose duty it would be to examine for tuberculosis all the men of the regular army, the national guard, and the first draft of the national army, the work after that to be taken care of by men selected from the medical reserve corps and given special training for this work.

The board of which I chanced to be a member examined the members of the regular army stationed at Fort D. A. Russell, the Wyoming national guard encamped immediately adjacent thereto, the Texas and Oklahoma national guards at Camp Bowie, Texas, and the first draft of the national army at the same place. These constituted

a total of about thirty-three thousand men.

It was necessary, for military purposes, to accept a somewhat different standard of diagnosis from that ordinarily held in civil life, because the government was not interested in slight, old, healed lesions of an apex, but in knowing if the soldier was fit for military service. Therefore, we were instructed by that master diagnostician, Colonel George E. Bushnell, whom the Surgeon General has wisely placed in charge of this work, to ignore these slight, old, inactive lesions and to recommend for discharge only those who had active lesions or who had inactive ones of considerable extent. After a very masterly consideration of all the recognized evidences of activity, Colonel Bushnell arrived at the conclusion that, with rare exceptions, the presence of crepitant or subcrepitant râles or extensive indeterminate râles (these he defines as râles not occurring in showers, not of uniform size, and confined to no definite phase of the respiratory cycle, usually found in old fairly healed lesions, or at least chronic lesions) was the most dependable criterion of activity.

The necessity for haste was such that we were compelled to limit our examination, ordinarily, to those measures which promised the greatest amount of information and the nearest approach to an accurate diagnosis in the shortest possible time. We soon became convinced that this end was best attained by depending, except for information gleaned from a hurried inspection, upon the stethoscope; and even this was limited in most cases to the matter of eliciting the breath sounds and determining the presence or absence of râles.

Our procedure was somewhat as follows: groups of men were brought into the examining room, stripped above the waist, each one carrying a brief history, previously taken by a clerical assistant. They were then instructed as to position, how to breathe, and how to cough at the end of expiration. The examination was then conducted with the soldier standing. After a hurried inspection, the soldier being again reminded to breathe uniformly, fairly rapidly and fairly forcefully, but not noisily, the

examiner would begin by examining the breath sounds as to symmetry and proper relation as to the respective elements, particularly as to pitch and duration. Then, instructions were given to take a moderate breath and let it out, finishing the act with a short forced cough, forcing, as nearly as practicable, all the air out of the alveoli. Attention was concentrated upon the inspiration following the cough, especially near its close, for it was at this phase of the respiratory cycle that most of the râles were heard, although they were sometimes heard at any part of the cycle. Fine and medium ronchi were also commonly heard either with the cough or somewhat early in the expiratory phase of the cycle, particularly in cigarette smokers. If there were no changes in the breath sounds and no râles were heard, the soldier was assumed to be normal; but if there was the least abnormality in either of these directions, the findings were noted and he was returned at a later date for further examination by the board as a whole. At this later examination all the recognized physical means of diagnosis were used and, as far as possible, pulse, temperature and weight observations and sputum examinations were made, but, unfortunately, in the chaotic condition due to the rapid organization of a tremendous army, these were not usually feasible, and we had only the benefit of x-ray examinations during the last few weeks of our work.

Had it been possible to organize the work so as to have a close clinical study of the doubtful cases and to make use of all these accessory means of examination, the work would undoubtedly have been more accurate, but so far as physical examination could go I believe that there was a rather surprising degree of accuracy, considering the fact that each examiner passed upon one hundred men a day, on an average, in the preliminary examination. This was evidenced by the fact that when a soldier was cited for further examination, the findings of the examiner were recorded, and when the secondary examination was made, he was examined by one or more members of the board, other than the original examiner, and then comparison of findings were made.

Furthermore, it occasionally happened that before the reexamination took place the man was transferred to another regiment, and there would perhaps be examined by another member of the board in the course of the routine examinations. In both these instances it was surprising to what degree the findings of the various members corresponded.

There were many things that arose to tax the judgment of the examiner. For instance, at Camp Bowie, there was a storm, which blew down most of the tents, wetting the men and all their belongings, followed by a cold north wind which left the majority of the men with very severe colds, most of which invaded the bronchi and made one's judgment of the lungs hazardous for several weeks afterward. Then followed a severe and extensive epidemic of measles, which had much the same effect. In both these cases, judgment often had to be postponed for several weeks and we were often, even then, forced to leave cases in the doubtful list, for we know that these things are potent factors in lighting up an old unrecognized tuberculosis. The dust was also extremely bad and caused considerable bronchial irritation. Another important factor of confusion resulted from the almost universal cigarette smoking among the soldiers, with its attendant bronchitis and cough.

I cannot close without referring briefly to this phase of our work, which was reported on by the chairman of our board, Major Webb, in the March number of the *American Review of Tuberculosis*. In this he gives an admirable discussion of the effects of cigarette smoking in producing pulmonary symptoms, and as a possible factor in the production of tuberculosis. You will note that he shows that of non-smokers only about twenty-five percent showed the presence of ronchi and many of these were accounted for by epidemic colds, while over eighty percent of those who inhaled cigarette smoke showed ronchi; also many of the latter showed localized râles, but they were usually of a more or less transient character, though some persisted in spite of all maneuvers. Then followed the rather surprising

final finding that, in spite of these numerous physical findings in the smoke inhalers, the number of them discharged for tuberculosis in proportion to the total number of inhalers was no greater, in fact a fraction less, than that among the non-smokers.

This is a little disconcerting in the face of the well known prevalence of the cigarette cough, and of our preconceived idea that any chronically irritated or inflamed area forms a suitable and favorable location for the lodgement of other infectious organisms, particularly the tubercle bacillus. This phase of the subject is most admirably dealt with in an editorial by Krause in the April number of the same journal. He proceeds to show the fallacy of this preconceived notion, as far as the implantation of new infection goes, but thinks it might easily play an important rôle in causing the lighting up of preexisting infections. However, he holds that even this effect might be favorable rather than unfavorable, provided that there were just enough irritation to act, like small doses of tuberculin, by causing a mild stimulation and a tendency toward repair, but that if it exceeded this mild degree of stimulation, it would in all probability cause a dissemination of the infection. This certainly gives excellent food for thought.

However, there are several factors entering into the conclusions drawn in Major Webb's article, which if considered further might materially alter these conclusions. First and perhaps most important is the fact that in a great many instances, in the course of our examinations, the râles were attributed to the heavy smoke inhalations, when these sounds were so prominent that the man would otherwise have been discharged for tuberculosis. These cases were left in a class for further observation, with instructions to cut out the inhalations, and if they are properly followed up, a considerable number of them will undoubtedly prove to be tuberculous and be discharged. Secondly, many men who were classed as non-smokers did not properly belong to this class, as evidenced by the fact that in some cases which showed the typical cigarette syndrome, the history classed them as non-smokers, while further questioning revealed

the fact that they had quit only a few weeks before. Consequently the percentage of non-smokers from which the deductions were made was entirely too high.

Imperfect as the examinations inevitably were, they resulted in the exclusion from the army of more than one per cent of the men examined, in other words more than four hundred men who were definitely tuberculous; and the setting aside for further observation of more than that many more. A considerable number of this latter group will have been discharged before embarkation for overseas.

It has been unofficially stated that the various boards over the country excluded on an average a little less than one per cent. This in spite of the fact that the majority of these men had been examined within a few months preceding the special examinations. It is calculated that on this basis considerably over one hundred thousand cases of tuberculosis of sufficient degree of seriousness to necessitate their exclusion from military service will have been discovered by the time all men of draft age are examined.

Consider, then, what this means, not only to the army but to the civil population. One hundred thousand potential invalids kept out of the army, and in most instances discovered while yet in a curable stage. No doubt, all of you have men under your care for tuberculosis who were picked up by the draft boards or by special boards.

When we consider that this embraces only about one-fifth of the vulnerable portion of the population and that by a close clinical study, including the use of all modern aids to diagnosis, the number of cases of definite clinical tuberculosis discovered would probably be doubled, what a vast possibility it opens up for work in this line!

Whether it comes about by universal military training with concomitant examinations at stated intervals during the susceptible years of life, or whether we shall have a public health department empowered to deal directly with these matters, I cannot say, but to me it seems inconceivable that we shall long drift along as we are and not avail ourselves of these means, which science has

given us, by which we shall be able to reduce to a minimum, if not entirely eradicate, this most formidable disease.

Furthermore, this is only one of the many fields opened up when we come to consider the lessons to be learned by a thorough study of large numbers of supposedly normal men, such as our military forces represent. One feels that the mobilization of a large army would almost be justified on the grounds alone of the opportunity for clinical study, the establishment of normal standards and the recognition of the earliest departure therefrom, resulting as it must in the most thorough application of the principles of preventive medicine.

DISCUSSION.

Henry Sewall, Denver: When you go into a sick room and meet a new case, suppose some friend of the family comes up to you and pulls out a gun and says, "I want you to diagnose that case and give a prognosis, or I will shoot you", what are you going to do? Of course, you must make a diagnosis and you must make a prognosis, particularly prognosis.

We have all thought we knew something about tuberculosis for many years. We had what might be called academic knowledge which would do for talking, but when the war came on somebody had to know something and do something. We had to pick out men to do the job and turn down the men who could not do the job. That is what an examining board is for.

Before this war was started I had the good fortune to be in Washington with Colonel Bushnell who told me of his difficulties. He wanted to find men in the country in civil life who could be depended on to diagnose tuberculosis and whose opinion could be accepted as to the eligibility of men for the service. He had requested certain people whom he knew in the United States to recommend men in their respective communities. About thirty-eight or forty from this state took up this work. After the board was disbanded I had the opportunity to ask Colonel Bushnell how the Colorado examiners stood up with the work as compared with the rest, and he replied, "I think they are the best in the country."

Now, when we consider our ordinary maneuvers, when a private patient comes to us for examination of the lungs we must give him a run for his money. He often gets an hour of our time. According to the rules laid down by Colonel Bushnell, it was expected for examiners to examine about fifty men in the course of a day, but at first sight it would seem impossible that this could be done if the examinations were thoroughly made. At first, Colonel Bushnell got a little restless because the examiners were not examining enough men in a day. Piqued by his criticism, the members of one board put on steam and examined each no less than one hundred cases in a day. Not infrequently in private practice we spend hours in examining a single case, and it seems a *prima facie* absurdity that such hurried work could be accurately done. But the proof of the pudding is in the eating. In examining men

for the service each examiner devoted the first five days of the week to the detection and descriptive localization of tuberculous lesions, and on Saturday his findings were reviewed by the different examiners of the board who usually came to the same conclusion as to findings. That is what I call practical diagnosis. That is what we call brass tacks, and the glorious results of this procedure you get from Dr. Gilbert's paper.

The protocol for these examinations as prepared by Col. Bushnell, in which minute characterization is given to the various morbid signs which, on the one hand, should reject a recruit for service and, on the other, form no impediment to his acceptance, presents, I think, a masterly contribution to clinical medicine. The way in which this part of the work has been backed up in Colorado we have reason to be proud of.

There are certain points that interested me as to the diagnosis of r les. Examiners unite in affirming that the fine moist r le of incipient tuberculosis is first apprehended during the inspiratory movement immediately following a cough. That is not my experience. I find the earliest r les trailing at the very end of a cough and almost obscured by the noise of the latter; they are therefore first heard at the end of an expulsive expiration.

George H. Cattermole, Denver: At the time Dr. Gilbert and the other men went out to do this work there was nothing to base the work on, except a few brief instructions from Colonel Bushnell. The board had to be organized and worked out the method of study by themselves, and it was a difficult matter. At first, it was very hard work examining twenty-five or fifty men a day, and the examiners were uncertain as to whether they were getting results, but just as Colonel Barber said last night of the neurologists, they acquired ability by practice. There were a great many men who scarcely needed to have a physical examination. They had every evidence of being perfect physically, and required very little time for examination. But with other cases, that were suspicious, one could spend more time, and **most of the examiners** acquired a great deal of ability in distinguishing between the probable tuberculous cases and those that were not likely to show anything.

It was not simply a matter of finding one per cent of cases of incipient tuberculosis; that was not so important as eliminating these men from the army. The incipient cases were often seen in cooks and waiters and men who were unable to do more active work and so were assigned to these places. If there is anything in infection after childhood, we believe that the elimination of those incipient cases was very important. The work of Dr. Gilbert and others was constructive work. It was well done, and there is plenty of it still to be done.

Franklin P. Gengenbach, Denver: I do not know anything about this subject from practical experience, but what Dr. Cattermole said calls my attention to an article I have read by Dr. Farrand, and I want to bring out two points. The first one concerns the work of the draft boards and the tuberculosis examining boards. He spoke of men that were rejected from the draft as tuberculous, and says that many, if not most, of these men have been going about freely in the community where they were afflicted with the disease, and that they were sources of danger to others, especially children. Some have known they had the disease but have not neglected their own condition and responsibility as regards the health of their associates. And then speaking of the situa-

tion more particularly in France, he says that the increase in the price of food, clothing and housing has exceeded the general increase in wages, consequently among the lower wage group, who comprise most of the population, the food supply has diminished both in quantity and in quality. This has produced undernutrition which in turn has reduced the physical resistance to tuberculosis, particularly among children.

H. J. Henderson, Grand Junction: I want to say one or two words on this subject and to speak from the standpoint of one who made examinations of men before they got to the army. There was one instance which seems to be in a way peculiar. We had three men that were returned last year, probably by the board that looked them over, with tuberculosis, after they had been in the army from three to five months. In looking over the examinations and histories of those three men when they came back, I found that every one of them had been in Colorado less than five years, while one man we sent, the only one that was turned back from camp with active tuberculosis, was a cowboy who lived in Colorado twenty-five years of his life.

In speaking of irritation of the lungs in those men who smoked, it is a fact that they did not have consumption any more than anybody else. Almost all the men smoked.

C. D. Spivak, Denver: Whenever I think of tuberculosis and the Colorado profession I feel despondent and discouraged. It seems to me Colorado's should have been the leading profession on the subject of tuberculosis, and we know it is not. It has not been, at least, and therefore, this was the first time that I felt gratified when I heard from someone the statement that we excel in finding out practically all cases of tuberculosis, and that the men here have, at least, utilized the many cases of tuberculosis that come here, for the purpose of learning how to make a diagnosis. It seems to me that this work the examining boards have done and are doing throughout the United States should benefit the inhabitants of the United States.

I want to call the attention of the profession to the experimental work that is being done at Framingham, Massachusetts, in a small community, in finding out tuberculosis and all other infectious as well as noninfectious diseases. Colorado should be the first state in the Union to take up the same work that is being done in Framingham, because we have men here and there who have the inclination to do social work. Why cannot Dr. Gilbert and Dr. Cattermole and others pursue the methods that are being carried out in Framingham? Such work as has been done in Framingham might be done in Colorado Springs in three months. They know every sick person in Framingham; they know where they live; they know the social and economic circumstances of every family, and they are doing excellent work. This work that is being done there will be almost monumental for the whole country. Nothing has been done to equal the thoroughness with which the city, citizens, physicians, social workers and churches have taken up this work. In fact, every agency is interested in finding out the standing of sickness in its city. Why cannot that work be done here first in the small communities? I think it is a great work and should be undertaken.

This work of the boards should stimulate the various men in the various small communities to take up this work and find out every sick person in their community and help them the same as we are helping tuberculous cases at the present time.

Dr. Gilbert (closing): I appreciate very much the discussion which my paper has provoked. In certain cases, râles may be heard with the cough rather than with the inspiration following. It has been argued with justification that râles may occur occasionally with the heightening of the intrathoracic pressure in connection with cough. Râles may occur at any time. It was Sahli who emphasized this type of râle. There are certain more or less atelectatic areas in the lung which are not expanded on inspiration, but with the increase of intrathoracic pressure occurring with forced coughing air is forced into the particular atelectatic area. As far as that particular section is concerned, it is after all an inspiratory phenomenon. Bray of the New York State Sanatorium called my attention to it. He frequently found it at the height of a cough.

Dr. Cattermole suggested this morning that it would be a great saving if much of this examining work could be done at the source. There should be men connected with draft boards who could weed out cases. We have found men who have given up their jobs and have travelled thousands of miles to cantonments and were then turned down. It seems a pity. Some of these men have said to me: "Here I am; I have given up my job and find now that I am to be sent back." There is now being made an attempt to do this work at the source.

MODERN SURGICAL TREATMENT OF ACUTE EMPYEMA.*

LEONARD FREEMAN, M.D., DENVER.

I am sure it would be much more in accordance with the fitness of things and of greater interest to the Society if this important subject could be handled by one of the returned military surgeons who has had a large experience in the cantonments. I suggested this; but somehow the committee did not seem able to "connect up" with anyone who was willing to undertake the job, so it is left to me, with my comparatively limited experience, to do the best I can.

My time being limited to ten minutes, I shall take up but one aspect of the subject—the modern surgical treatment of acute empyema.

The recent war has brought great numbers of men together in the camps and cantonments, among whom have developed an unusual number of cases of acute pulmonary disorders, manifesting themselves principally in pneumonia and empyema.

The thing to emphasize and bear constantly in mind is that **pneumonia and empyema are frequently found together.**

*Read before the Medical Society of the City and County of Denver, March 18, 1919, as part of a symposium on pneumonia.

This is the key to the whole situation and to the theory of treatment.

Our old treatment, established long ago and universally practiced, was to drain every case of infected pleural exudate as soon as infection was established, and in general this worked well.

When we attempted to apply this treatment, however, to the pleural exudates occurring in the epidemics in the cantonments, it failed, much to our surprise. The mortality was enormous.

After a period of discouragement and high mortality, it was discovered that much better results were obtained—in fact, surprisingly good results—by aspirating the fluid at intervals for a number of days, until it had time to change from a thin, cloudy, infected fluid to a real pus, and then, and not until then, operate and drain, as of old.

How can we explain these changes in treatment? Were we mistaken in our older ideas? Or has a new form of empyema developed, requiring a new form of treatment?

This question caused much confusion for a time, but the explanation finally appeared. It is this: The majority of the empyemas occurring in the cantonments were not uncomplicated empyemas, but were empyemas in conjunction with a septic form of pneumonia. Hence the operations were really done upon individuals suffering with pneumonia as the principal disease, and with empyema on the side, both literally and figuratively speaking.

It is easy to see why such operations were disastrous: First, owing to the shock of an operation to a system already overburdened by pneumonia and sepsis, and, second, which is the principal reason, because the opening of the chest produced an acute pneumothorax.

And why should a pneumothorax be disastrous? Because (1) the breathing space of the patient is already limited by the pneumonia, and a pneumothorax increases this limitation by collapsing the lung; (2) the pain following the operation limits the breathing capacity still further; (3) the mediastinal diaphragm has no support, which permits it to "flutter", as it were, and hinder the work of the other lung; (4) this

same instability of the mediastinal diaphragm interferes with the action of the heart and disturbs the much needed circulation. Hence, the patient becomes cyanotic, his sepsis increases, his circulation decreases, and he dies.

Are we then to discard open operation and drainage altogether? Not at all. A time comes presently when the pneumonia subsides and the fluid in the chest turns from a sero-fibro-purulent one to real pus. Then is the time for operation and open drainage; first, because it relieves the patient of a lot of septic material; second, because the lung is permitted to expand, thus avoiding the formation of a permanent cavity in the chest, which is notoriously difficult to cure; and, third, because experience has shown that an operation is then safe.

To sum up the situation: Our old treatment of empyema was right when used in appropriate cases; but we have recently learned that it must not be employed in cases complicated with pneumonia until after the pneumonia has subsided.

But the complication of pneumonia is not always easily recognized, as just emphasized by Dr. Sewall. Hence, if any doubt exists, it is better to go cautiously, with repeated aspirations, and not operate until the situation is clear.

If it is dangerous to operate in the beginning in pneumonia cases, what is the necessity for aspiration? Why not let the fluid in the pleural cavity alone? The answer is easy—aspiration does several things: it allows the lung to expand and relieves dyspnea; it removes a definite quantity of toxins and thus decreases sepsis; by lessening pressure against the mediastinal diaphragm it removes embarrassment of the heart and circulation; and in a certain number of cases, where the infection of the fluid is not too pronounced, recovery results without the necessity of operating and without adhesions of the lung in positions detrimental to its function.

Another change from our older form of treatment has also taken place, although of less importance than the one just discussed. We were formerly taught not to irrigate the pleural cavity after an operation, because it

did no good and because it might increase sepsis and give rise to embarrassing reflex symptoms or even to dangerous emboli. Experience in the cantonments has proven, however, that irrigation when properly done may be of advantage, even though not always necessary, in that it may decrease sepsis, shorten convalescence, and even permit of the early operative closure of the chest without drainage.

How are we able to do this now, when it could not be done before? The explanation lies in the proper use of Dakin's solution. I say advisedly the proper use; because if improperly employed it is worse than useless. Its proper employment requires the greatest care and vigilance, and should not be undertaken by those lacking adequate experience.

The question presents itself: Should our old method of the early operative treatment of empyema be completely discarded, or are there still cases in which it should be employed? The answer is that there are many such cases. In fact, we usually should operate early when we are sure that the empyema is primary and that no pneumonia or other debilitating complication exists.

In conclusion, would it not simplify the situation if we were to limit the term empyema to the existence of actual frank pus in the pleural cavity, as it should be limited, and speak of the more watery serous, sero-fibrinous and sero-fibro-purulent exudations which precede the formation of true pus, as pre-empyemic stages of the disease? If we did this we should avoid confusion, and our old rule would still apply—to do an open operation in most cases of true empyema.

424 Metropolitan Building.

A COLORADO PHYSICIAN IN THE ARGONNE.

CAPTAIN B. A. FILMER, M.C.

(On account of its exceptional narrative quality, we reproduce below, almost in its entirety, a letter recently received by Dr. W. H. Crisp from Dr. B. A. Filmer, who before entering the army was associated with Dr. E. R. Nepper of Colorado Springs in the practice of ophthalmology. After having been for some time attached to the eye, ear, nose, and throat department at Camp Lewis, Washington, Captain Filmer was sent to France with the

364th infantry regiment, landing at Le Havre on July 20, 1918. He is now attending the medical department of the University of Poitiers, in the department of Vienne, France. At the time of writing this letter, he was one of about fifty medical students at that university, and so far was the only one taking special eye work. He expects to return home after the end of the university term on June 30th next.)

August 18, I received orders to report at once at the Army Sanitary School, at Langres, for instruction. Here nearly a hundred medical officers were formed in classes for instruction in the various duties of the medical officer; somewhat similar to the instruction given at the training camps in the states. Here as in all previous training we were taught on the theory of trench warfare; as a matter of fact none of us saw service in the trenches. When the American Army hit the Boche line it kept going till stopped by the armistice. It is true, however, parts of our army had held trench sectors but they were a small part of the forces Uncle Sam had over here.

Just before the term was to close I was ordered to rejoin my regiment. A simple procedure, after I had located the regiment. It had been on the move for several days, frontward, and no one knew where it was. I started in the general direction of where it should be and finally located it hid in a wood, on Sunday morning, September 9th.

We were advancing by forced night marches to our place in the First American Army. Our division, the 91st, was part of the army reserve in the attack on the St. Mihiel sector. We finally reached Pagny-sur-Marne, where we found a train of French auto trucks, camions. These night marches, under full pack, in the rain (it always rained at night) began at dusk, continued till just before dawn, when we marched into a wood, which was frequently only underbrush, crawled under a bush and slept as only tired men can sleep; starting out again as it grew dark.

Unless you have had the experience it is hard to imagine what it means to come limping in, crawl, wet and tired, into the bushes, spread out a rain coat, lie down and sleep till some tired leaf above you gives up in despair and pours its collection of rain in your ear or down your neck.

Bad as these marches were, I prefer them to that wild ride in the camions the night we left Pagny. We had been held at this place so we could be sent in to help the forces on either side the salient, in case we were needed, Pagny being south of the apex of the huge triangle the Germans had driven into the allied lines. It was reported help was needed on the west side and we were hurriedly loaded for our joy ride. I hope never to spend another such night of torture. We were all crowded and cramped in the small space of the truck, driven at top speed, through the dark, without lights, by a driver who sometimes indulged in short naps. We were alive the next morning, hungry and tired and sore and mad enough to have whipped the whole German army. But after all our efforts, our part in the drive on the St. Mihiel salient was to see the flash and hear the roar of the guns and guard prisoners.

After two or three days' rest we resumed our favorite pastime of night marching until we reached a small town, a few kilometers in the rear of the woods where we were to camp until the new offensive started. We reached this point about 3 a. m. As usual it was pitch dark and raining. Our camp was located in an orchard on top of a hill. To reach this we must carry our baggage up a rough, steep roadway, through mud and water and over an old trench or two, some job when, as an Irishman remarked, it was so dark you could not see your hand behind your back.

After a time our tents were up and we could rest. Lieutenant Adams, the battalion dentist, and myself had our tents under a large spreading apple tree and were quite comfortably located. We remain in this place several days, resting and preparing for the coming fight. Each day we have the pleasure of watching air battles between allied and Boche planes. At times a Boche plane sails over to observe allied troop movements; then our anti-aircraft guns begin to bark and we see puffs of smoke appear about the plane and we know our shells are after him. Occasionally pieces of the shells dropped in our midst, reminding

us it was not altogether safe to keep our faces turned upward.

Our last day in the orchard the Boches turned their artillery our way and we had the novel experience of hearing shells pass over our own heads on their way to try and locate batteries in our rear. That night we moved out. Even as the last of our column left the ruins of the town shells were exploding in the remains of the buildings. Fortunately none of us was hit, but a day or so later I learned my apple tree had received a direct hit that night and was blown to pieces and a shell crater occupied the spot where my tent had been.

We moved into the Bois de Hesse (Forest of Hesse) and camped. This is a spot about twelve miles from Verdun and the scene of several bloody struggles during the past four years. Neither side had been able to make great headway and they had settled down to a "watchful waiting" game. Our camp site was among abandoned and ruined trenches, dugouts and wire entanglements.

When we arrived these woods were the scene of renewed activity. French and American batteries of all calibers, including huge naval guns, were going into position. Vast quantities of ammunition and supplies were coming up, thousands of troops were being assembled. All movements were at night and everyone and everything was kept hidden so the enemy would not suspect an attack was in preparation at this point. These precautions were futile, for from captured documents we afterwards learned the Germans knew of our plans several days prior to the attack.

This drive through the Argonne forest was a most desperate venture and fighting of the most severe character was anticipated. The British who had tried it and failed prophesied we would not succeed. The French shrugged their shoulders and said we might succeed if we cared to pay the cost.

The day before the day of all days came; tents were struck, blankets and other equipment not to be carried were packed and piled in one huge stack and left under guard. About seven in the evening we began our all night march to the front line

trenches. At midnight the artillery let loose. The uproar was indescribable but if the pandemonium that night had been a million centipedes with all their feet on a myriad loud pedals it could not have equalled the continuous booming of all that artillery. All the while the horizon was lighted up by the flashes of the guns.

We reached our position about 4 o'clock in the morning; we were to follow another regiment out, as the sector of attack was too restricted to go out. That regiment stirred up a hornet's nest for us. As we awaited the time set for us to go over, the Boche artillery began throwing shrapnel into us and we medics had a busy time of it. Almost the first shell wounded the other battalion surgeon and several of our medical corps men, leaving me practically alone. However, our dentist, Lieutenant Adams, assumed the duties of a surgeon and was an invaluable aid to me during our stay in the fight.

As we went through the wire out into the open the enemy artillery fire became terrific. Our losses were very heavy and naturally the work of the surgeons and their first aid men was very great and where the fire was the hottest. How we came through is more than can be explained, but we found ourselves after a time crossing the fields just back of our own front line troops, and the Boche in full retreat, although still full of fight. Our greatest advance was the first day, not quite so much the second, less the third and the next five days we settled down to hold our gains until our artillery could come up and prepare for a further advance. This holding was most trying, for we were constantly under heavy artillery and machine-gun fire, besides enemy snipers were quite annoying till they proved themselves very indifferent marksmen.

As you may surmise, the work of a front line surgeon is limited to first aid and emergency work. They see that the wounded are brought off the field and given emergency attention. At our aid station we made coffee from the reserve ration taken from the haversacks of the dead and wounded. This hot coffee was most refreshing

for the wounded and undoubtedly saved many a life that would otherwise have been lost. Of course in a rapid advance such as was made the first day or so aid stations were out of the question. Wounded were dressed when found and assembled in a sheltered spot in a wood if one could be found, a piece of bandage tied to a tree or rifle as a marker, and some of the less severely wounded left in charge with instruction to stop any ambulance or other transportation passing to the rear and have the wounded taken in. There were not medical corps men enough to leave one with these groups of wounded; we were all needed with the advancing troops. One fact clearly demonstrated was the inadequate personnel of the medical detachments with combat troops. I am convinced lives were lost that might have been saved had there been more medical men available for duty at the time.

When our troops settled down to hold their gains and stations were established in buildings just back of the lines, stretcher bearers brought the wounded here, where they were dressed, tagged and either carried back on stretchers or in ambulances. To these stations also came cold, hungry, tired officers and men. They were given hot coffee, bacon and hardtack, which had been taken from abandoned haversacks; and allowed to rest and sleep.

Our experience here demonstrated that the medical supplies should include concentrated foods which may be prepared and served hot in just such emergencies for the wounded and also for troops tired and hungry and cold. There should also be included means for heating food and for warming patients other than by the ordinary fire and stove. The lack of these things greatly handicapped our work.

I cannot pass over this point without a word about the conduct of the wounded. Men shot to pieces lay without a murmur; cold, no covering, rain dripping through the leaky roof, and not a complaint. But so long as I live I will never forget the look of their eyes as we eased them into a more comfortable position or gave them something hot to drink. One poor fellow, I re-

call, said: "All I want, doctor, is something to put me to sleep". We thought he had only a flesh wound till an examination developed both femurs shattered by machine-gun bullets. He died before morning. Another said: "Don't mind me, fix up some fellow who needs attention." All the matter with this man was a wound in one ear, one arm and one leg broken and two or three bullet wounds.

The building we occupied was surrounded by an old orchard. In this were several snipers left by the Boches when they retired. Their men had on our uniforms and mingled with our troops at will. They were very annoying, as each time a wounded man was brought to the station the stretcher bearers were fired upon, as was the surgeon when he came out of the building. Passing troops were fired upon and a number of men were wounded. Finally a party was organized which searched the orchard and no further trouble was experienced. The cemetery across the way increased its population.

The German has no respect for the red cross. We all started into the fight with our brassards on our left arm. Most of them were taken off the first day, as they proved an excellent target. I wore mine throughout the entire time, but have not worn it since. A red cross marker was placed at our station as a guide for wounded but it was soon shot down. It was not replaced, since it drew artillery fire. Besides this, in nearly every machine gun nest which our troops captured they found one or more German gunners ornamented with the red cross brassard. Stretcher bearers were fired upon continually and the chaplain with his burial squad was always under fire. On one occasion they had a grave ready for some German dead and had to take shelter in the grave from the intense artillery fire turned on them.

After eight days of fighting we were relieved. We marched back by easy stages, i. e. we marched by day and slept by night. We had lost heavily in the battle, we were tired, dead tired, ragged and dirty. Dysentery set in and increased our losses greatly. Soon we were in warmer billets and cleaned

up. Replacements joined us. We expected a rest. We were cheered by the nice things the generals said about us. We had been "cited in orders". The 91st Division had established itself as a fighting division; one that could be depended upon in battle. So just ten days after leaving the Argonne, during which time we had rested by marching some sixty or seventy miles, we were loaded on trains, and a couple of days later we found ourselves at Ypres, Belgium, the scene of some of the worst fighting of the war. The British, Belgians and French had kicked off here a few days before and we were to follow them up.

I have read of No Man's Land. Now I have seen it. No description could do it justice. It must be seen to be appreciated. No trees left, nothing left of towns but a board marker at a cross-roads and the name on the map; smashed concrete dug-outs (pill boxes), ruined trenches, roads and railroads blown up, wrecked trains, ruined tanks, one great stretch of desolation and destruction; and the biggest, boldest rats that ever grew anywhere, at any time in this world's history. My hat is off to the men who held these trenches for four long years.

The day we reached this point our regimental surgeon went to the hospital sick, and his job fell to my lot. I felt like taking the next ambulance myself.

Sunday morning, October 20, we began our advance into Belgium. The Germans had retreated rapidly before the allied advance, destroying everything they possibly could as they went. You have read so much of the destruction and rape of this unfortunate country I won't repeat it here. Suffice to say what you have read is not exaggeration. My criticism is that no one had painted it bad enough.

October 30 our first battalion took over part of the front line south of Waereghem, attacking the next day. This scrap was short and sharp compared to the Argonne but was very costly to us. As regimental surgeon I was back in the reserve with the colonel and his staff with the balance of the regiment. My conscience was hurting me a little because I was not at the front

with my old battalion but was back in a place of "safety". Just then a couple of shells struck the road along which we were marching, killing eight and wounding nearly fifty others. My conscience became easy at once.

Our advance from this point was by easy stages to the river Eiseaut or Scheldt as it is also called. We were to have crossed this Saturday night, November 2, but owing to lack of material the engineers had been unable to construct bridges, so we were compelled to withdraw until these were provided. The enemy were in force on the hills across the river and were only a little over a mile from us. Luckily a heavy fog prevented them from discovering us and by the time the sun had dispelled the fog we were hidden. A week later we advanced through Audenarde, crossed the river and chased the Hun towards his lair. We had advanced to a small town called Hoorsebeke-St. Marie, and were in line ready to attack when orders came calling a halt to further hostilities: this was at 9:45 a. m., November 11, 1918. The war was over and we were holding the front line preparing to attack when halted by this order suspending hostilities.

From this time on nothing but uninteresting routine duties occupied our time. We enjoyed the turnip, beet and carrot fields left by the Boche. Fresh vegetables were most welcome after long subsistence on canned goods. We advanced nearly to Brussels, then returned through No Man's Land to near Calais, then entrained for our location in the embarkation area near Lemans. We have been busy cleaning and repairing clothes and equipment and kidding ourselves of the German plague, the cootie. The Germans claim they had none in their armies but we found many excellent bathing and delousing plants in Belgium when we drove them out.

The German certainly lived up to his ideal, the Hun. Just as a sample: when they evacuated Audenarde, they told the populace to remain, as the town would not be shelled. As soon as they were all across the river and safely on their fortified hills they turned their guns on the defenseless

town and shelled it unmercifully. Then knowing the people had sought safety by going into their cellars, the Hun filled the town with poison gas, which being heavier than air flowed into the cellars and killed the occupants like rats in a trap. Over five hundred lost their lives by this act.

TWO CASES OF UREMIA MISTAKEN FOR INSANITY.

Reports of Cures.

C. S. BLUEMEL, M.A., M.D., DENVER.

Case I. On June 20, 1917, Mrs. O., aged fifty-seven, went to the Denver city jail and demanded admittance. She did this a second and a third time, and as a result was taken to the county hospital as insane. Here she talked disconnectedly about the necessity for baptizing the child. When questioned about herself she gave flippant and irrelevant answers and in general showed a tendency to be negativistic. When asked her age, she replied, "She's a darn green chicken, and don't tell all she knows." She gave the year of her birth as "the eighth of July". She showed some disorientation, giving the day of the week incorrectly and making an error of nearly three weeks in the date. She was somewhat delusional and stated (incorrectly) that she owned a seven-acre fruit farm in St. Joe, Michigan. She was very restless and seldom remained in the same place or position for more than a moment.

The tendon reflexes were slightly increased. There was a Babinski reflex on the right. The pupils were irregular, and showed diminished reaction to light. Examination of the heart revealed a rough systolic murmur at the apex, the murmur being transmitted to the axilla. The systolic blood pressure was 170; the diastolic, 80. The morning temperature was usually subnormal. The Wassermann reaction on the blood and spinal fluid was negative. The first analysis of the urine showed that it was positive for albumin. A second analysis showed a trace of albumin. No casts were reported.

The patient gradually became more rest-

less and disturbed, and would often pull her bed to pieces and drag the furniture about the room. Once she draped the sheets upon the wall in the form of a cross. She became so destructive that it was necessary at times to keep her in a straight-jacket.

With the increasing disturbance the patient became more definitely delusional, and would often speak of being persecuted by the Masons and the A. P. A. She said that old Doctor M—, an A. P. A., had killed her sister, and all the children got sick. At night she was often noisy and violent, and at times it was necessary to give her hyoscine or morphine. She frequently refused to eat, and in every respect was most difficult to manage.

At the end of three weeks a lunacy commission met and Mrs. O. was adjudged insane.

Just at this time her demeanor underwent a change. Her restlessness and activity disappeared and she became drowsy and, at times, almost stuporous. Her eyelids drooped and she looked definitely toxic. Physical examination showed that she had developed a moderate edema of the lower legs. The urine was reexamined and albumin was found to be abundant, and there were numerous hyaline and granular casts.

She was accordingly put on intensive eliminative treatment. She was purged and sweated, while liquids were given by mouth to the extent of her ability to take them. Intensive purging was found to be difficult of accomplishment, owing to the fact that the usual drastic cathartics, such as croton oil, compound jalap powder and elaterium, had little more than a mild laxative effect. Finally, castor oil was tried and active catharsis resulted. As far as possible the patient was kept on protein-free and salt-free diet.

Under this treatment, Mrs. O.'s mental condition improved rapidly and in three or four days she was practically normal. She chatted pleasantly, answered questions that were addressed to her, and asked many things about herself. She remembered going to the jail, but could not explain her purpose. She remembered nothing that had happened in the hospital and it seemed to her that she had been there only a few days.

Having been legally adjudged insane, Mrs. O. was now removed to the state hospital at Pueblo. A copy of her clinical history was sent with her and Dr. Evelyn Price continued the treatment that had been already instituted.

The patient's mental condition continued normal and at the end of four months she was paroled, in the care of relatives. At the end of another three months she was formally discharged. More than a year has since elapsed and she has remained well. She has been a little irritable at times, and once or twice has had short periods of drowsiness. Unfortunately, her mode of life is not under intelligent supervision and she gives but scant attention to the matter of diet and elimination.

Case II. Nineteen-seventeen was the twelfth year in which Mr. M. had had convulsive attacks. He was sixty-five years old and his career as an epileptic had begun at the age of fifty-three. At first the attacks occurred at intervals of two or three months, but their frequency had gradually increased and by 1917 they occurred every week or two. They always came on during sleep.

The attacks seemed typically epileptic. They started with a cry and continued with tonic and clonic spasms. The jaw was firmly set and the tongue was often bitten. The sphincters frequently relaxed. After the attacks, the patient was confused for several hours. For a year before the onset of the attacks the patient's health had been failing, and he had never really "been himself" during the twelve years in which the attacks continued. Then, in the spring of 1917, his mind seemed to be failing. His memory was poor and he often forgot the day of the week. He would have dazed spells during the day and at night he often had difficulty in finding the electric light switch. He continued his work as stenographer, but was plainly losing his grip.

Late in December, 1917, the patient began to limp from a swollen foot. He went down town to have his foot attended to by a doctor, and while down town he became insane (as his wife puts it) and was brought home in an ambulance. The following morning his mind cleared, but after a few hours

the mental trouble returned. For a few more mornings the patient had lucid intervals, then finally the mental trouble become permanent. Meanwhile the foot was found to be infected, so an incision was made and drainage established.

For two weeks the patient's mental and physical condition became steadily worse. A fatal prognosis was given by the doctor in attendance, and the patient was removed to a hospital. In the hospital he acted irrationally and wandered about the wards. On account of this conduct he was shortly removed from the hospital and taken to Mount Airy Sanatorium. It was here that the case came under my attention.

The patient was brought in with a general diagnosis of "insanity", and with a fatal prognosis. It was difficult to elicit a clinical history from the relatives, for their chief concern was the selection of an undertaker, and they regarded any discussion of the patient as morbidly reminiscent.

The patient was found to be in a stuporous condition. At times his body was in a coarse general tremor which was not unlike a chill. On passive motion the arms displayed a cog-wheel rigidity. There was no rigidity or spasticity of the legs. All the tendon reflexes were much increased and the right knee jerk was more active than the left. The pupils were small, but they were regular and equal, and reacted normally to light. The heart seemed not to be enlarged. On auscultation the cardiac sounds were weak. The pulsations at the wrist were irregular in time and force. The pulse rate was 84. The systolic blood pressure was 105; the diastolic pressure was 60. The peripheral arteries were sclerosed. There was no edema. There were varicose veins on the right lower leg. There was moderate cyanosis. The tongue was dry, coated, and fissured. The left foot was red and swollen and displayed two incisions that were discharging pus. Apparently there existed a prostatic abscess, for large numbers of pus cells appeared in the urine when the prostate was massaged. There was moderate fever.

The leucocyte count was 19,700. The blood Wassermann was negative. The urine was weakly positive for albumin, and

strongly positive for acetone. It contained numerous granular casts.

The patient was put on intensive eliminative treatment. He was given large quantities of liquids by mouth and was purged with castor oil or magnesium sulphate. He was given Fischer's solution* intravenously till the acetone had disappeared from the urine (3000 c. c. of the solution in sixty hours). The prostate was massaged daily. At the end of a week active catharsis was discontinued, but the bowels were still kept in a moderately loose condition.

On this treatment the patient showed immediate improvement and at the end of twenty-four hours he was no longer stuporous, but merely confused. Within seventy-two hours he was having relatively lucid intervals. His improvement was at first most marked in the mornings, but gradually the lucid intervals lengthened so that he was soon normal throughout the day. At the end of two weeks he showed no further mental symptoms. Toward the end of the fourth week he had convulsive attacks on two consecutive nights. After the attacks he became confused and irritable and somewhat delusional, and he did not fully recover from this condition for a week.

At the end of his sixth week the patient was discharged. His mental condition was now normal, and his physical condition had greatly improved. The heart's action was better and the radial pulse was full and regular. The systolic pressure had risen to 130; the diastolic pressure was 70. The cyanosis had disappeared and a healthy color had taken its place. The urine no longer showed albumin and there were very few casts. No pus cells appeared on massaging the prostate. The infected foot had practically healed.

This patient has continued well for over a year. After returning home, he was at times a little forgetful and confused, but in a few weeks this difficulty disappeared. After three months he resumed his occupation as stenographer and has since remained at his work. He has had no further convulsive attacks.

900 Metropolitan Building.

*14 grams sodium chloride, 20 grams sodium carbonate, to 1,000 c. c. of freshly distilled water.

News Notes

An interesting statement made by Dr. Dehély, when addressing members of the Medical Society of the City and County of Denver at one of their recent luncheons, was that while an epidemic of typhus was raging in Roumania it was discovered by a Roumanian doctor that the use of intravenous injections of chlorine gas (dissolved in physiologic salt solution) would overcome the intoxication caused by the disease almost immediately. When a leucocytosis of 20,000 occurred the prognosis was bad, ninety-two percent of the cases being fatal. With the use of the chlorine gas injections the death rate in these severe cases was reduced to eight percent.

A free clinic for tuberculous sufferers was opened early in April at headquarters of the Visiting Nurse Association, 302 South Wahsatch avenue, Colorado Springs. The clinic is in direct charge of Dr. Mary R. Noble. The institution will be under the auspices of the Colorado Springs branch of the Colorado Public Health Association, recently formed there, and in addition to the handling of tuberculous cases will cooperate in the baby welfare movement.

Dr. S. Fosdick Jones has been honorably discharged from the medical corps of the army and has resumed practice of orthopedics with offices in the Majestic Building, Denver.

Rumor has it that Dr. J. N. Hall will be honorably discharged from the army medical corps and return to Denver, possibly by the first of May.

Dr. C. A. Ringle of Greeley, during a pleasure trip through the east, is visiting various clinics in the specialty of eye, ear, nose and throat.

The only new member on the Colorado State Board of Medical Examiners for the year 1919 is Dr. C. F. Andrew of Longmont. Dr. Strickler retains the office of secretary.

A physician is wanted at Hayden, Colorado. The residents of that district are willing to guarantee substantial returns to a competent man.

Dr. William D. Fleming of Boulder has been made regimental surgeon in the Reed hospital at Washington, D. C.

Dr. Lanning E. Likes of Lamar has been promoted to the rank of captain in the medical corps.

Dr. James Rae Arneill arrived in Denver March 30th, having been honorably discharged from service at Camp Kearny, California. He has resumed practice in the Metropolitan Building, Denver, his office having been maintained during his absence.

Dr. F. R. Spencer of Boulder has been honorably discharged from service at Camp Lewis and has resumed practice in his home city.

Dr. A. W. Rew of Fort Collins has been made a captain in the medical corps of the army. He is with the army of occupation in Germany.

Dr. W. A. Jayne of Denver returned to that city the latter part of March, having received an honorable discharge from the army medical corps. He will take up his practice again with offices in the Majestic Building.

Dr. W. E. Collins has been released from service at the Aurora general hospital and given an honorable discharge.

Captain W. A. Sedwick of Denver has been transferred from Camp Grant, Ill., to the United States general hospital at Biltmore, N. C.

Dr. J. A. Dunwody of Cripple Creek has moved to his old home at Brunswick, Ga., following his honorable discharge from the army.

Dr. V. R. Pennock of Longmont has returned

home following his honorable discharge from army service.

It is understood that a Chaffee County Medical Society has completed its organization with the appointment of a committee on by-laws, consisting of Drs. Fuller, Curfman and Parker. Regular meetings of the society will be held the first Tuesday of each month.

Major James H. Brown of Colorado Springs has returned home with his family on a four weeks leave of absence from his command at Camp Logan, Texas.

The death of Dr. Frank Finney of La Junta occurred March 23, 1919.

In a bulletin issued by the American Red Cross War Council March 1, 1919, it is stated that in the previous twenty-one months the American people had given in cash and supplies to the American Red Cross more than \$400,000,000. The American Red Cross entered the war with 500,000 members and at the date of this statement had 17,000,000 full paid members besides 9,000,000 junior members. There were 9,000 workers enrolled in France at one time and 6,000 are still required there.

Dr. D. G. Monaghan of Denver returned from Camp Lewis March 16, having received an honorable discharge from the medical corps.

The city of Durango reported fifty-eight cases of influenza in the week ending March 13, 1919.

Capt. J. M. Braden has been honorably discharged from the army, and has resumed practice at La Fayette.

Dh. F. L. Washburn of Denver has enlisted with the Red Cross for service in Siberia.

Capt. C. T. Burnett, who was about one year in Paris serving under Dr. Livingston Farrand, has been welcomed home by his many friends in Boulder.

Dr. Arthur W. Stahl of Denver, who returned home with base hospital 29, will open an office on the first floor of the Metropolitan building for the practice of bacteriology and pathology.

Dr. R. M. Shea of Denver was erroneously reported in the last issue of Colorado Medicine as having been discharged from the navy. He is simply on the inactive list and subject to call to service if needed in the future.

Dr. L. G. Crosby, who returned to Denver with base hospital twenty-nine, is again in harness in the civil practice of roentgenology.

Lieut. J. A. Philpott, who was in charge of the genitourinary work in the army at Camp Taylor, has been relieved of duty, with an honorable discharge, and has resumed practice in Denver at his old office, 530 Metropolitan building.

Captains C. G. McEachern and H. R. McGraw were both seen in Denver the latter part of March on their way to the U. S. army general hospital at Aurora, which may mean their early discharge from the service.

Volunteer Medical Service Corps.

A report submitted at the final meeting of the Central Governing Board of the Volunteer Medical Service Corps shows that nearly 70,000 applications have been received from physicians for membership in the Corps, of which 56,540 had been received and coded prior to the signing of the armistice, November 11, 1918. Qualifications of these civilian doctors, classified and coded on cards, will be placed in the library of the Surgeon General of the army, where they will be accessible to all governmental departments for all time to come. With the approximately 40,000 medical officers additional, who are in the Army, Navy and Public Health Service, practically all the able-

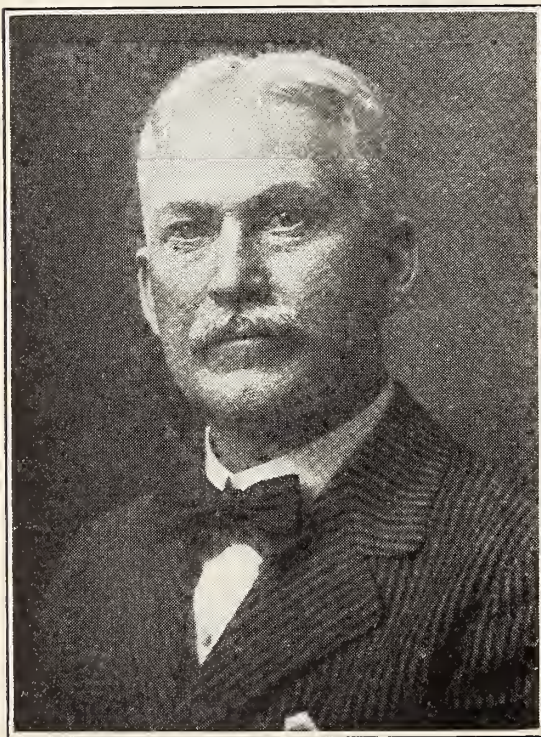
bodied, eligible doctors of the country will be listed, available for the nation's needs. Usually there are said to be about 150,000 physicians in the United States, but this total includes a large proportion of superannuated, disabled or ineligible.

New and Nonofficial Remedies. During March the following articles were accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Non-official Remedies: Swan-Myers Company: Swan's Mixed Acne Bacterin (No. 41); Swan's Pertussis Bacterin (No. 38) (Prophylactic); Swan's Mixed Furunculosis Bacterin (No. 39); Swan's Typhoid-Paratyphoid Bacterin (No. 42) (Prophylactic).

THE DEATH OF DR. FRANK FINNEY.

(The following short biography of Dr. Frank Finney, a former president of the Colorado State Medical Society, was furnished by Dr. E. Gard Edwards of La Junta.)

Dr. Frank Finney, Chief Surgeon of the Western



The Late Dr. Frank Finney of La Junta.

Division of the A. T. & S. F. Hospital Association, and one of the best known and most popular practitioners of the lower Arkansas Valley, died on the morning of March 23, 1919, at the family residence in La Junta, Colorado, following an illness of only a few hours' duration. Death was due to angina pectoris superinduced by chronic rheumatism from which he had suffered for the past two years.

A few months ago Dr. Finney retired from general practice, devoting himself to surgery and consultation work in addition to his work at the Santa Fé hospital in La Junta.

Dr. Finney was born in Ohio on May 13, 1858. He was the son of Thomas Finney and Maria (Orr) Finney. He was married at Lawrence, Kansas, in 1882, to Grace Houghtelin, who survives him as do also two children, Dr. Royal Finney of the C. F. & I. Hospital Staff at Pueblo and Mrs.

Gertrude Williams of New York City, wife of Dr. Jesse Williams, Assistant Director, Camp Service Department of Military Relief, American Red Cross, lately of U. S. M. O. R. C.

Dr. Finney was graduated from Georgetown University and Bellevue Hospital. He served from 1882 to 1884 in the Indian Service in Indian Territory. From there he moved to Las Vegas, New Mexico, where he entered the service of the A. T. & S. F. R. R. In 1889 he moved to La Junta, where he has held the appointment as Chief Surgeon of the A. T. & S. F. Hospital, continuously since that time. He was at one time president of the **Colorado State Medical Society**, was a member of Beta Theta Pi fraternity, A. M. P. O. medical fraternity, and was a Knight Templar. For several years he had been president of the local building and loan association, vice-president of the First National Bank of La Junta and vice-president of the Colorado Savings and Trust Company. For many years he had been an elder and trustee of the First Presbyterian church of La Junta and had held numerous other offices of trust.

Blessed with a most charming personality and, through his unfailing business acumen, being the possessor of goodly wealth, he led a useful and well rounded life and will be sadly missed in many circles of endeavor.

Dr. Finney was said to have been the first physician in the lower Arkansas Valley to perform an appendectomy. He was calm and deliberate in every action, his surgical judgment was excellent, and he had a remarkably large experience in herniotomies and appendectomies.

Funeral services were held at the family residence on the morning of March 29, and the body was shipped to Lawrence, Kansas, for interment.

Immediately after the services, a called meeting of the Otero County Medical Society was held and resolutions regarding Dr. Finney were adopted, which will appear in the proceedings of the society.

Medical Societies

CITY AND COUNTY OF DENVER.

The regular business meeting of the **Medical Society of the City and County of Denver** was held Tuesday, March 4, 1919. President Jackson presided.

Dr. M. T. C. Love read the report of the legislative committee, which was accepted and the committee continued.

Dr. Frank L. Washburn and Dr. Zdenko von Dworzak were elected to membership in the society.

An address was made by Judge Ben B. Lindsey upon the legislation relating to venereal diseases. He thinks that the cases arising from the social evil should be tried in a chancery court instead of the criminal court. He suggested that it would be well to have many of these cases decided by doctors, which could be done if the cases were tried in chancery court. He also advocated the passing of laws to protect the doctor in the performance of his duties.

Dr. Haynes, of the State Board of Medical Examiners, came before the society to explain the bill relating to the annual registration of physicians. Since there has been great difficulty in keeping track of old licenses and since there has been given an opportunity for fraudulent use of licenses, this new law will make it possible for

the state board to more readily protect the reputable physician. The bill provides for a fee of \$2.25 per annum to cover the expense of registration.

"Skin Diseases as a Cause of Military Disability" was presented by Dr. A. J. Markley in an interesting paper. He claims that skin diseases rank first as the cause either directly or indirectly of military disability. The most important of the skin diseases are those due to parasites. He also discussed burns and the "trench foot". The skin affections in the case of "trench foot" are due to atrophic changes caused by cold, moisture, and the immobility. He also explained the care of the feet necessary in order to prevent this trouble.

Very interesting was the paper given by Dr. C. D. Rillance on "Gas in Warfare". He discussed the different kinds of gases and gas masks. He showed a small box respirator. Phosgene poisoning causes respiratory irritation, then edema of the lungs followed by asphyxiation. The victim generally dies during the first twenty-four hours, but if he can be kept alive for seven days all danger is over. Chlorine gas is still more irritating. The patient is in a serious condition from the first. Nasal irritants are generally used before the phosgene and mustard gases. The vesicant gas is di-chlor-ethyl-sulphate (mustard). The effect of this gas is longer developing. It is two or three hours before the symptoms, smarting, swollen eyes, burning throat and erythema of the moist parts of the skin, develop but the pain increases for twenty-four hours until the patient is suffering severely. The victim acquires a cough which develops into broncho-pneumonia with death in three or four days or, in delayed cases, three or four months. Photophobia is a prominent symptom.

The two papers were discussed by Drs. Fosdick Jones, Edward Jackson, and O. M. Shere.

Dr. Vroom reported for the committee on an emblem for automobiles. It was decided to adopt the same design as the A. M. A. and the State Medical Society. A committee was appointed to decide on the name for the margin and to procure emblems for the members.

Under the head of new business, Dr. Jackson spoke of the desirability of obtaining new applicants for membership in the society. A committee consisting of Drs. John McCaw, James J. Waring and Harry L. Baum was appointed to secure desirable applicants.

MARY R. STRATTON, Reporter.

A regular scientific meeting of the **Medical Society of the City and County of Denver** was held in the hall of the Society, Tuesday, March 18, 1919, President Jackson in the chair. The following were elected to membership:

Drs. Joseph P. Craney, Theodore Ernest Beyer, and James McCarroll.

The meeting was devoted to a symposium and discussion upon pneumonia. Dr. R. W. Arndt, in opening, remarked that if we knew more of the mechanism of the crisis in pneumonia, it would probably give us better control of the disease. He presented statistics regarding the different types of pneumococcus classified as types 1, 2, and 3, and group 4. Types 1 and 2 furnish the largest number of cases, but type 3 gives a more serious prognosis, forty-five percent of the cases presenting this type of organism having proved fatal. The organisms classed in group 4 caused a smaller number of cases and generally were less virulent.

The type of organism was of special value in connection with prognosis. While the pneumococcus was found to be present in about fifty percent of normal individuals, the organisms mostly

belonged to the milder group 4. So far as he had been able to gather, the results of the use of Rosenow's antigen had not been strikingly favorable.

Dr. F. P. Gengenbach found that the fixed types of organisms occurring in children were usually of but slight virulence. As a prophylactic, the use of a mouth wash of ethylhydrocuprein solution was probably of value. This drug seemed to have definite value in the treatment of pneumonia, but it sometimes caused blindness with atrophy of the optic nerve. He believed digitalis was of benefit and considered that the same action observed on the normal heart could be relied on when the heart was disturbed by fever. In connection with the recent epidemic he quoted statistics in which the influenza bacillus had been found in but one case out of sixty-six suffering from pneumonia, while forty-four cases presented the streptococcus. On the other hand statistics from a different source showed that in eighteen cases coming to autopsy, the influenza bacillus had been found in all, being obtained from most of them before death, but always other organisms were present, most frequently staphylococcus, pneumococcus, and streptococcus.

Dr. Henry Sewall called attention to the prolonged interval that sometimes occurred between the first onset of the disease and the development of the physical signs of pneumonia. He cited two cases from his own experience illustrating such a course. He pointed out that suspicious cases should be treated during this stage with great care. As to the order of development of the physical signs, bronchophony generally precedes the crepitant râle. The conditions uncontrolled in the recent epidemic could not be compared with anything we have seen before. He had observed first a rasping breathing, followed by a crepitant râle in the lower lobe, most commonly the left; these signs being pathognomonic of pneumonia in the late epidemic. The impression first made was that the consolidation was lobar, but by changing the position the dullness could be replaced by a form of tympany. In six cases, all of which seemed likely to die, he had aspirated the lung, and under this treatment four of them had recovered.

Dr. Leonard Freeman read a short paper upon treatment of empyema with pneumonia which will be published in full in *Colorado Medicine*. (See p. 88, this issue.)

Dr. H. L. Baum, taking up nose, throat, and ear lesions which may be connected with pneumonia, pointed out that infection of the upper respiratory tract may have a casual relation with an acute pulmonary infection. In the recent epidemic, sinus infections were very common, but caused little disturbance during the progress of pneumonia, attention being called to them later. They probably had no other significance than that the infection was general. Ear complications have been frequent and serious. In three cases, he had been called upon to do tracheotomy. All were relieved of the obstruction to respiration but later had died of the general infection.

Dr. H. B. Whitney cited two cases bearing upon the treatment of empyema associated with influenza pneumonia. These patients were repeatedly tapped. At first, serous fluid, then such fluid and air, later sero-fibrinous fluid, and finally pus, were obtained. One patient without any drainage operation recovered. The other became free of fever but later showed a sharp rise of temperature, was sent to the hospital, and died. He thought the explanation of the relation of the influenza to pneumonia was that the influenza prepared the way for infection by the pneumococcus and other germs. This would explain the

variety of clinical types that have appeared in the epidemic. Deaths occurred from what might be termed chemic changes. The heart was acting well, the respiration was not fatally damaged, but cyanosis came on and death speedily resulted.

Dr. Sewall urged that a practical step would be some arrangement for obtaining the serum of patients who had recovered from influenza and injecting it early to prevent dangerous complications.

Dr. H. S. Shafer had observed that cases tapped five or six times before a resection was done for drainage did better than those resected earlier. At Fort Logan, last April, they had thirty-eight deaths following influenza. In May they started to treat all cases with sodium-salicylate injected intravenously. Up to the 30th of the month there was no death; then there was a change of doctors and treatment and in three days three cases of pneumonia developed. According to his observation, no cases of pneumonia occurred if the salicylate was crowded early.

Dr. F. H. McNaught had seen many cases of empyema, but no cases were now operated on until pus had fully formed. Before, when they were operated early, unfavorable sequelae followed. The Carrel-Dakin solution had been used in twenty-five cases of resection, but these did not do so well as the cases treated without it.

Dr. G. P. Anderson thought that Dr. Freeman's paper gave what would be the last word on the treatment of empyema with pneumonia in the military camps. Dichloramin-T was used for irrigation in these cases. Where aspiration of the lung had been resorted to as mentioned by Dr. Sewall, abscess had resulted. The experience in military camps was that the open window was better than any elaborate system of ventilation.

Dr. Arndt knew of no untoward effects from the use of blood serum of recovered patients. He believed it was the only rational treatment we had for the influenza.

Dr. Gengenbach spoke of the use of soft rubber tubing for drainage of the pleural cavity. The chest movements forced out the contents but the collapse of the tube prevented back pressure.

Dr. O. S. Fowler presented an instrument for bringing and retaining the intestine in contact with the abdominal wall in cecostomy, to obviate the danger of leakage and the necessity for a second operation. He also presented an instrument for the control of hemorrhage in prostatectomy.

EL PASO COUNTY.

The regular monthly meeting of the **El Paso County Medical Society** was held at the Elks Home, March 12, 1919. Forty members of the society and two visitors were present. Doctors R. F. Rohlfing and L. C. Huelsmann were elected to membership.

The program for the evening was a Symposium on Influenza-Pneumonia:

Etiology and Pathology....Dr. George B. Gilbert
Types and Diagnosis.....Dr. W. H. Swan
Prevention.....Dr. A. C. Magruder
Treatment.....Dr. G. B. Gilmore
Complications.....Dr. C. O. Giese
Pregnancy and Influenza.....Dr. Beverly Tucker
Transfusion in Influenza.....Dr. M. O. Shivers

Those taking part in the discussion were Drs. J. F. McConnell, A. C. Magruder (speaking on sinus complications), S. W. Schaefer, T. J. Evans, Frank T. Stevens, F. A. Faust, Z. H. McClanahan, A. H. Peters, Charles Mills, H. C. Moses, C. R. Arnold, G. B. Gilmore, J. B. Crouch, and George A. Boyd. Dr. Magruder spoke of the fact that a

general raise of fees should be made. No action was taken on this.

C. E. RICHMOND,
Secretary.

FREMONT COUNTY.

At the March meeting of the **Fremont County Medical Society**, Dr. F. N. Cochems read an unusually interesting paper on varicose veins, dwelling upon the ligation of the internal saphenous and an accurate way of locating the upper end of it by percussion over the superficial branches below the knee.

Dr. Pitt A. Wade presented a good paper on lethargic encephalitis with citation of a case in his own experience.

Officers of the society for 1919 are:

E. C. Webb, president, Cañon City.

R. C. Adkinson, vice president, Florence.

V. A. Hutton, secretary-treasurer, Florence.

Otis Orendorff, delegate, Cañon City.

R. E. Holmes, first alternate, Cañon City.

C. H. Wilkinson, second alternate, Cañon City.

V. A. HUTTON, Secretary.

COLORADO OPHTHALMOLOGICAL.

The regular meeting of the **Colorado Ophthalmological Society** was held in Colorado Springs on February 15, 1919; Dr. Alexander C. Magruder presiding.

James A. Patterson, Colorado Springs, showed a case of tuberculosis of the conjunctiva in a boy of thirteen years. The diagnosis of tuberculosis was confirmed by microscopic examination of the tissues, which showed characteristic areas of caseation and some tubercle bacilli. Discussed by Melville Black, George F. Libby, and Edward Jackson.

E. R. Neeper, Colorado Springs, presented a case of radiating lense opacities, of very slow development. Discussed by Edward Jackson and Melville Black.

E. R. Neeper, Colorado Springs, presented a case of cataract with doubtful light projection, for opinions as to the advisability of operation. Discussed by Edward Jackson, C. E. Walker, W. H. Crisp, and Melville Black.

E. R. Neeper, Colorado Springs, presented a case in which cataract extraction had been done with apparent success but with unexplained failure to obtain vision. Discussed by C. E. Walker, D. A. Strickler, George F. Libby, W. H. Crisp, Melville Black, Edward Jackson, and W. C. Bane.

E. R. Neeper, Colorado Springs, presented three cases of penetrating injuries of the eyeball, one from gunshot and particles of brick, another from explosion of a water glass on a stationary engine, and a third from extensive laceration of the eyeball. Discussed by W. C. Bane, C. E. Walker, W. H. Crisp, and D. A. Strickler.

F. E. Wallace, Pueblo, reported a case of severe ocular infection, of obscure etiology, in a baby between the ages of two and six months. Discussed by C. E. Walker.

A. C. Magruder, Colorado Springs, presented a woman who had had bilateral iritis resulting from antrum infection. Discussed by W. C. Bane.

A. C. Magruder, Colorado Springs, presented a man in whom partial atrophy of the optic disc of each eye had been treated with potassium iodide and mercury, with marked improvement in vision.

Detailed reports of these cases and of the discussions are to be found in the American Journal of Ophthalmology.

WILLIAM H. CRISP,
Secretary.

Colorado Medicine

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Editorial Comment

PROPOSED MUNICIPAL SANATORIUM.

The interest of the physician in proposed measures affecting the public health of the community in which he resides is perhaps more vital than that of any other individual citizen. It arises not only from his concern as a taxpayer but from the fact that his advice upon such measures will frequently be sought by his patients, and their favorable or adverse votes be materially influenced by his attitude. A clear responsibility therefore rests upon the physician to inform himself thoroughly of the merits and demerits of such proposals and to act according to his convictions.

Such a measure presents itself at the coming city election in the bill providing for a bond issue of \$850,000 for the construction of a municipal tuberculosis sanatorium, and for additional construction at the county hospital and county poor farm. Of the total sum it is expected that \$500,000 will be devoted to the sanatorium which will, at present prices, provide site, building and equipment for three hundred patients.

The desirability of improved facilities at the county hospital probably will be readily granted by those who have been members of its staff or are otherwise familiar with its needs. The advantages and disadvantages of constructing a municipal tuberculosis sanatorium may perhaps not be so clearly in mind. Naturally, the first consideration is whether a need for it exists and, if so, how far this is being met. It will perhaps come as a surprise to some that one hundred forty-three Denver resi-

dents died of tuberculosis, contracted in Denver, during 1918. The Framingham Health Demonstration, as a result of careful study, finds that in the average community there are nine open cases of tuberculosis for each death. Estimated on this basis it is possible that there are over twelve hundred open cases among residents of Denver. Another clue to its need is afforded by recent draft and army figures. Up to March 1st, one hundred eighty-five Denver residents, discharged from army camps for tuberculosis, had applied to the Home Service section of the Denver Chapter of the Red Cross for relief. The Denver Antituberculosis Society has on file, in addition, the names of seven hundred ten men rejected by the Denver draft boards for tuberculosis, a majority of whom are residents. From known figures and sound estimates it is therefore possible to plan on two thousand or more cases of active tuberculosis among residents of the city alone. Since tuberculosis is predominantly a disease of the poor, a considerable proportion of these are unable to finance proper home or sanatorium treatment unaided. The better prospect of cure for the curable and the desirability of preventing spread of infection by the incurable, possible through sanatorium care, need not be urged upon any medical man.

To meet this situation the city now has sixty beds, thirty-five at the county hospital where open air treatment is impossible, and twenty-five at the county farm where no medical supervision is available. The minimum number of beds required by a community is usually calculated at twice the number of yearly deaths from the disease, i. e., for Denver a minimum of two hundred eighty-six beds for residents. The total deaths in Denver and neighboring san-

atoria in 1918 were nine hundred seventy-nine, indicating the need of a minimum total of nineteen hundred fifty-eight beds. These sanatoria actually have a total of one thousand eighteen beds, somewhat more than half the estimated requirement, and on March 11, 1919, accommodated but one hundred sixty-three residents of Denver.

The favorable results which might be expected from a municipal sanatorium, apart from its humanitarian aspects, include not only increased protection to Denver's forty thousand school children through segregation of at least many of the most infectious cases, but also the economic saving effected by transforming otherwise helpless residents into productive citizens. It costs less to cure a patient of early tuberculosis than to allow him to die. The experience of the Modern Woodmen Sanatorium near Colorado Springs suggests possibilities. Over half of their ex-patients are living and these "have earned a total of \$3,533,096.27".

Two main arguments are urged against the project of a municipal tuberculosis sanatorium: the cost, and the fear that it will attract hither increased numbers of indigent tuberculars. As to the former, calculating on a basis of retirement in fifteen years, five percent interest and an assessed valuation this year of \$348,000,000, it will cost, to care for principal and interest, less than one-third of a mill, or under thirty-three cents per thousand valuation per year.

It is doubtful if any physician could name with certainty more than four or five cities having municipal sanatoria, yet more than one hundred and seventy have them. Such sanatoria are not advertised. The most potent magnet which attracts the indigent tubercular here is our widely advertised climate, and those who advocated the establishment of the Aurora hospital for non-residents with its attendant publicity, will perhaps note some inconsistency in opposing adequate care for Denver's own citizens from fear of the same publicity which was before disregarded. Moreover, it is entirely within the power of the city to exact a one, two or even three years' residence for entrance and thus exclude the non-residents.

Other pertinent considerations will doubtless occur to many, and it is highly desir-

able that every physician should give the matter careful thought. C. N. M.

A MINISTRY OF HEALTH.

It is not yet possible to form a very accurate conception of the extent of the reforms which will be accomplished in Great Britain under the proposed new ministry of health. It is of course not yet certain that the plan will be adopted; and, even if the bill passes, no one can foretell to what extent it will be amended.

Dr. Christopher Addison, who introduced the bill in the House of Commons, and who is now president of the Local Government Board, is mentioned as likely to be the first minister of health. Before he entered the political arena, Dr. Addison was a teacher in medical schools, and the British Medical Journal attributes to him the opinion that the perfecting of medical education is one of the first duties of the state.

Under the peculiarities of the English parliamentary system, one important advantage to be obtained from the creation of a ministry of health in that country will be that members of parliament will be able at any time to place upon a single member of the cabinet responsibility for a great variety of matters relating to public health which have hitherto been distributed throughout as many as twenty-one departments or subdepartments of the government. Such ministerial responsibility is kept alive in England, not merely by newspaper and other extraparliamentary criticisms, but also by the practice of asking formal questions in the House of Lords or House of Commons, corresponding, we may recall, to the interpellation of the French chambers. The further advantage of consolidating under one office staff a number of public health duties does not need to be emphasized. If the bill becomes a law, there will rapidly develop a number of secondary problems of local organization, especially those relating to improvement of institutional treatment and the establishment of consultation centers.

The new central organization will have transferred to it the duties of the English Local Government Board with regard to

public health, the duties of the Insurance Commissioners, the powers of the Board of Education with regard to mothers and nursing children, and the administration of infant life protection. It is proposed later on to further include in the same department the care of mental defectives, certain functions of the Pensions Ministry as regards disabled soldiers, and duties of the Board of Education in connection with medical inspection. It is also of interest to note that it is proposed to include the subject of housing among those dealt with by the ministry of health.

Among the questions mentioned in discussion on the second reading of the bill were the advisability of controlling the professional qualifications of physicians not merely at the time of their admission to practice, but from time to time throughout their career, and the taking over or control by the government of the great hospitals and teaching schools. There has also been apparently a good deal of perturbation in the minds of many of the medical profession in England as to whether the creation of the ministry of health might not lead to a state medical service.

It must be remembered that there are radical differences between the political framework of England and that of the United States. Whereas in this country we have in theory a number of sovereign states which have by common agreement delegated some of their powers to the national government, in England the central government is in all matters supreme, but delegates to various local authorities throughout the country such powers as it deems advisable, usually reserving to itself a supervisory jurisdiction the influence of which is frequently enhanced by the system of national contributions to local administrative purposes. In many respects the system of "states' rights" in this country has proven unsatisfactory or inadequate, and it is interesting to note that there is a tendency to assimilate the relationship between our national and local governments to that existing in Great Britain. That is to say, our own national government is rapidly extending its authority in the individual states by contributing funds for the use of which the

states must give a proper accounting, and the continued payment of which is subject to businesslike and efficient administration, as well as to a proportionate expenditure out of the monies of the state. The national supervision thus already established with regard to highways and venereal diseases, to mention two conspicuous examples, is likely in the near future to be extended to a number of other functions of government, especially that of education, in which all our efforts at standardization of methods have fallen considerably short of what might be accomplished by a proper coordination between federal and state authority.

W. H. C.

NATIONAL MEDICAL TREATMENT.

Under the above title W. J. Howarth and B. A. Richmond*, the latter secretary of the London Panel Committee, and the former a member of the same committee and medical officer of health of the city of London, set forth a scheme for the provision of medical care upon a basis which may be compared to that with which most civilized countries are now familiar as regards public education; namely that the service shall be available free of charge to any individual who may desire to make use of it.

The authors argue that, "as the prosperity of the state depends upon the health of its citizens, it seems reasonable to expect the state to make the provision necessary for maintaining health by arranging that medical treatment shall be available for everybody, and that the cost of such service shall be a central charge."

In England, by virtue of schemes either already in force or under consideration, somewhere between two-thirds and three-fourths of the total population seem likely before long to be entitled to medical services for which they as individuals will not directly pay. The administrative difficulties involved will be of such magnitude that the authors ask "whether it would not be sound policy to make the state service available for every member of the community who desires to use it". The change from a sys-

*British Medical Journal, 1919, page 274.

tem of contributions jointly by employers, employees, and the state to the entire provision of the necessary funds out of national taxation would not very greatly add to the financial difficulties involved, if indeed the latter method did not in the long run prove the more simple of the two.

As between the panel system, a whole time service, and a part time service upon a national basis, Howarth and Richmond express the opinion that the main advantage of a whole time service would be that it would be administratively more flexible and that this would be more than counterbalanced by the advantage of a competitive all-time service in which the individuality of the practitioner would become the important factor in his success. They would establish such a service upon the basis of central clinics at which each member of the medical staff would put in a definite number of hours a day and where all the work ordinarily performed in the course of what is known as either general or special office practice could be carried on.

As regards the doctor, a number of interesting requirements are suggested, such as that "there should be opportunity for the sternest competition", that "non-professional work should be limited to the minimum", that "adequate provision should exist for enabling the profession to take part in the control of its members", that "there should be satisfactory remuneration", and that "the work should be pensionable on a contributory basis".

Frequent comparison is made by the writers between their proposed national medical service and the system of public education. There is, however, one important difference between the two, namely that public school teachers do not divide their time between public and private practice; and it is difficult to see how such conflicting responsibilities and financial inducements could, on so large a scale, be made to fit harmoniously into each twenty-four hours of the life of the average medical practitioner.

A critic of the scheme propounded by Howarth and Richmond argues that it does nothing to remedy the principal disadvantages under which the general practitioner labors. These disadvantages he enumer-

ates as follows: the necessity of working for excessive hours; the difficulty of obtaining holidays; the disastrous effects on practice of a breakdown in health; the lack, incidental to excessive hours, of opportunity for reading, postgraduate study, amusement, or social intercourse. The critic (J. A. Butler) rightly maintains that "if any scheme of national medical service is ever brought into being, one of the things that it ought to offer to the public above everything is protection to the patient against careless work", a protection which is at present inadequately provided by the privilege of changing his doctor and the right to ask for a consultation.

It is probable that a ballot of physicians, in any country, would vote down any proposal for a national medical service. The decision in these matters, however, does not and will not rest with the medical profession, but with the great mass of the industrial population, which is more and more favorably disposed to some plan of state medicine. Whether or not we approve the modern tendency, we must be prepared to discuss it intelligently, and, rather than stand aloof, offer such matured advice that the inevitable legislation will do as much good and as little harm as possible both to our profession and to the general public.

W. H. C.

Original Articles

WATER HEMLOCK POISONING.*

MARY R. STRATTON, M. D., DENVER

Water hemlock, or *Cicuta Occidentalis*, has been popularly known throughout Montana and most of the western states as wild parsnip, which is an erroneous impression, as the true wild parsnip is not poisonous. Certainly it is not true that the garden parsnip, allowed to escape from cultivation and to run wild, acquires poisonous properties.

Cicuta Occidentalis is a stout perennial, from three to seven feet tall, and belongs

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

to the parsnip or carrot family. The stem is hollow, smooth and green. The plant has a very characteristic bunch of spindle-shaped roots, which contain a yellow, gummy secretion having a musky odor similar to the parsnip but more disagreeable. The taste of the root is somewhat sweet and not sufficiently disagreeable to deter children or even men from eating enough to produce fatal results. There is a peculiarity of the root stock which is always present and not found in other umbelliferous plants which are likely to be found in the same locality. This is the presence of a number of transverse chambers which will be seen when the root stock is cut longitudinally. These chambers are not as distinct in the spring as they are later in the season. The leaves are doubly compound and each leaflet is long, narrow and finely toothed along the margins. The flowers are very tiny, greenish-white, in dense compound clusters on the tips of the branches. The plant flowers after the fifteenth of June. It grows at from four thousand to eight thousand feet elevation, along the banks of streams, irrigation ditches, wet railroad embankments, swamps and wild meadows.

The garden parsnip has yellower flowers, a broader leaflet, a single root, a rough—not a smooth—stem and does not necessarily grow in wet places. A variety of wild parsnip, *Washingtonia*, which grows in the woods from one to two feet tall, branches but slightly, has a broader leaflet and has similar cross plates in the single root stock, is confused sometimes with the water hemlock. It is not poisonous. The water hemlock is sometimes confused with the water parsnip, which is found in a few places in Colorado and is popularly supposed to be poisonous, possibly because it is mistaken for the water hemlock. The water parsnip can be distinguished by its having one long fleshy root instead of a cluster. The leaf and stem also differ. The sium grows in wet marshy places and has the cross plates in its root stock, and the plant resembles the water hemlock, but the leaves are only once compounded.

The genus *cicuta*, water hemlock or cowbane, has a large number of different spe-

cies and all of them have the same poisonous properties. It is the most violently toxic of all plants growing in the temperate regions and is widely distributed in the northern continents. It is known in England as cowbane; in France as *cique vireuse*; in Germany as *wasser-schierling*, and in Spain as *cicuta oriulenta*. In America it has been known at different times by many popular names, as cowbane, parsnip, wild parsnip, water parsnip, spotted hemlock, spotted parsley, snake-weed, musquash root, spotted cowbane, death-in, beaver poison, muskrat-weed, death-of-man, brook-tongue, children's bane and pecos. By the Indians it was known as *utcum*.

The species of *cicuta* found in Europe is *cicuta virosa*, while that found in the humid eastern part of America is called *maculata* and that in the Great Lakes states, *cicuta bullifer*. There are many other varieties, but those we are most interested in are the three principal varieties which grow in the northwest. The variety which grows in the Rocky Mountain region westward to the Sierra Nevada mountains and northward, is the *cicuta occidentalis*, or Wyoming water hemlock. It differs from the eastern variety in having more elongated spindling roots and a duller color of its flowers. The Oregon variety is called *cicuta vagans* and is distributed over northern California, Oregon, Nevada, Washington and Idaho. The purple stemmed variety called *cicuta Douglasii* which is found in Washington and British Columbia, differs from the Wyoming variety in having a purple instead of a green stem, smaller and more numerous roots.

The water hemlock is not the poison hemlock of history. It was the *conium maculatum* that is supposed to have been used to kill Socrates. The symptoms described are the symptoms of the *conium* poison, not *cicutoxin*. The parts used in this poisoning were the green leaves, stems and the green seeds, which were bruised to obtain the fresh juice. In the case of the water hemlock, the poison is in the root, and possibly some is in the lower foot of the young plant. The *conium maculatum* does not grow in Colorado.

The genus *cicuta* has been definitely

known since the middle of the sixteenth century. Konrad Gesner in 1541 first clearly distinguished the *cicuta* from *conium* and in 1543 he called it *cicuta aquatica*.

The first description of the symptoms of poisoning by *cicuta* was given by J. J. Wepfer in 1679. This is said to be one of the best descriptions ever written. At that time he wrote a book of three hundred and thirty-six pages, in which he reported the cases of two boys and six girls who were poisoned by eating the roots of the *cicuta*. Later he published a short paper, giving the details in regard to the poisoning of four other cases. J. J. Wepfer noted the fact of the fluid condition of the blood in his cases of poisoning. This lack of coagulation of the blood has been noted since and has been demonstrated during the experimental work on animals which has been done in recent years. During the eighteenth century there were a number of cases reported, the symptoms carefully told and a few autopsies made. One of the best descriptions of this time was a paper written in Dutch by Schwenken in 1756. Two books, one by Dr. Allen in 1730 and the other by Dr. Mead in 1775, on poisons, spoke first of *cicuta* under the head of poison plants. Schoepf, in his *Materia Medica Americana* of 1787, speaks of the poison of the *cicuta aquatica*. During the nineteenth century there were more cases reported, and Bigelow in his *Medical Botany* of 1817 gives a full account of the plant and its poisonous properties. All through this literature the reports of symptoms, told more or less fully, give a clear idea of the main points. Those poisoned began with cramps or pain in the stomach and an effort at vomiting and bowel movement. Those who vomited were more apt to recover. Then followed the typical convulsions with a sudden stiffness and immobility of all the muscles of the body. Some called the convulsions tetanic or epileptiform. There was unconsciousness, frothing at the mouth, open rigid eyes and dilated pupils. Usually there was death by asphyxia in a convulsion within a short length of time after eating the root, or a quick recovery after the convulsions were over. A few spoke of the amount taken in fatal cases. Stockbridge in

1814 says his fatal case ate one dram. Little in 1874 said death was caused in his case by a piece of root the size of an almond.

The post mortem findings are of interest. J. J. Wepfer (1679) found a fluidity of the blood and patches of redness on the mucous membrane of the stomach. Hazeltine (1818) found a stomach distended with flatus and containing a greenish muciform fluid. Others found an injected state of the mucous membrane of the stomach with redness of the air passages. The blood vessels of the brain and sinuses were filled with dark liquid blood and there was more or less congestion of the central nervous system.

There is but little found on this subject in the recent medical literature. The most complete report is a paper by Anfin Egdahl (1911) in which he gives a full and accurate account of the symptoms of a case in which the child recovered. He also gives a complete review of other cases which he could find in the available literature in both Europe and America. He found the report of only forty-eight cases. Both Peterson and Haines' *Toxicology* and Witthaus and Becker's *Toxicology* contain accounts of this plant and its poisonous qualities. The nineteenth edition of the *Dispensatory of the United States* (1907) speaks of this plant among non-official drugs.

The poisonous principle of this plant is in the root stock, or possibly in the basal portion of the young plant, and was first separated by Van Ankum in 1868 and isolated and named by Boehm and Trojanowski in 1876. In 1876 Boehm published his careful investigation of the poisonous principle of the *cicuta virosa*, calling the poison *cicutoxin*. He found it an uncrystallizable, resinous body, of acid reaction, disagreeable bitter taste, soluble in boiling water and in dilute alcohol. It belongs to a group of very poisonous compounds known as toxins, to which picrotoxin belongs. The poisonous principle has also been described and studied by Wikszemski in 1875, Pohl in 1894 and described also by Kunkel in 1901. This all relates to the *cicuta virosa*.

At the State Home for Dependent Children, Denver, on the evening of April 23rd, 1918, eleven boys between the ages of eight

and twelve years were seriously poisoned by eating the root of the water hemlock or *cicuta occidentalis*. Two of the cases were fatal. The boys had eaten the root after six o'clock while out on the grounds, after their evening meal. They were taken sick in about an hour after eating. Those first taken sick had been in convulsions between thirty and forty minutes when I first saw them, others for a much shorter time. Still others were taken sick while I was present. One of the fatal cases, in another dormitory, I did not see.

I had not been on the ground long before the police ambulance arrived with Dr. D. Samuel Goldhammer, the police surgeon. I was very thankful for his assistance and help. Dr. Goldhammer and I agreed that apomorphine would be the best immediate treatment. While we were busy with the boys, the superintendent, Mr. C. A. Donnelly, made an investigation of what the boys had been eating. He found they had been eating a root. Parts of the root were exhibited to us, but we did not know the root nor had we ever heard of poisoning of this character.

The sickness began with acute cramp or severe pain in the stomach, with an inclination towards a bowel movement and vomiting. Mostly, the vomit was a clear frothy fluid. (Those who vomited the stomach contents were not so sick.) They then became dazed and fell wherever they were and went into the most frightful convulsions and unconsciousness. None of them remembered anything about the events of that night when he awoke in the morning in the County Hospital.

The spasms were of a tonic character, accompanied by cyanosis and frothing at the mouth. The pupils were widely dilated, the eyes open, eyeballs rigid and corneal reflex absent. With some, the eyes were rolled up and the head drawn backward when they went into the convulsions and they became rigid in that position. In the case of others, the eyes were bent downward and the head forward. The jaws became locked and it was impossible to give them anything by mouth. The legs were somewhat parted and partly flexed. The arms partly flexed and held from the body, the hands clenched and

finger nails blue. The muscles of the whole body were rigid and hard.

In those who had been in convulsions some time, the pulse was fast, irregular and weak. During the severe convulsions, the breathing was interfered with to such an extent that the face was blue and livid and one wondered if they might not die from suffocation. The external surface of the body was cold. There was no bowel action or urination during the convulsions. Once in a while the convulsions would relax, only to return.

Benjamin C., age eight years, was taken sick first. I did not see him, but received an accurate account from his matron and others who saw him. He first had a bowel movement accompanied and followed by a very severe pain in the stomach, and then made an effort to vomit. He only brought up a little clear frothy fluid. While trying to vomit, his head began to twist around, his eyes rolled upward and he would have fallen if his matron had not caught him. He tried to say something, but became unconscious and went into a convulsion. His convulsions were so intense that blood came from his mouth and nose and the froth at his mouth was bloody. His position was that of opisthotonos. Those who saw him did not expect him to live. In his case the convulsions were nearly continuous, only partly relaxing once in a while, until he died on the way to the county hospital, a little over two hours from the time he was taken sick.

Frank S., age nine, was the next one taken sick and was the other fatal case. He did not vomit and we were unable to produce vomiting even with the second dose of apomorphine. He also remained in almost a continuous convulsion, with the eyes and head drawn backward and the body rigid. He, along with others who were in convulsions, was in a hot bath when I arrived. The pulse was fast and weak and difficult to count. In his case the whole abdomen was very greatly distended. Chloroform inhalations were then given, but the convulsion did not relax until he was pulseless and exhausted. He was then placed in bed and artificial respiration was given. After he revived somewhat, he was placed in the police ambulance and sent to the county hospital, where he arrived at 9:45 p. m. The

rest of the history I have taken from his history sheet at the county hospital. There he was given gastric lavage with a weak tannic acid solution. He was stimulated by hypodermic medication, stimulating enemas, hypodermoclysis and oxygen. To promote elimination he was given Fisher's solution by proctoclysis. To control the convulsions, morphine and chloroform inhalations were given. After twelve he again went into convulsions, having one after another until he died at 3:20 a. m.

The two boys who died were very much bloated after death, so much so that it was hard to realize they were the same boys.

Bobbie B., age eight years, was the next taken. He vomited from the apomorphine, but as he had been in convulsions so long, he did not relax as quickly as the others and had two convulsions later, after arriving at the county hospital. George G., age nine, was also one of those most severely poisoned. In his case the head was not held stiffly, but was limp and hung forward. Henry S., age nine, Elmo M., Clyde F., and Mike K., all eight years old, were in different stages when I arrived. Bernard A., age eight, took sick while I was administering apomorphine and I gave him a dose immediately. He was beginning as severely as the others, but he soon vomited freely and recovered from his convulsions in a comparatively short length of time. Chester M., age twelve years, and Charles M., age ten, did not become sick as soon as the others. Probably they had eaten less of the root. As soon as they began having pain and started to vomit, the matron quickly gave them some warm mustard water and they vomited freely and brought up quite a quantity of the root. They avoided having the terrible convulsions. They were given apomorphine and stomach lavage at the hospital, along with stimulation. They exhibited there, especially one of them, a slow weak pulse, but as that was more or less characteristic of the boys, it was probably not all due to the poison.

All of the boys, except the two who died, had recovered to some extent and were through with their convulsions when they were taken to the county hospital by Dr. Goldhammer. Bobbie B. had two more con-

vulsions at the hospital and some of the others had some twitching of their muscles.

The treatment at the county hospital was directed by Dr. A. S. Taussig, who was on service at that time. Dr. G. K. Olmsted, who had been called, also helped to care for them at the hospital.

The treatment at the hospital consisted of stomach lavage with a weak tannic acid solution, hypodermic stimulation, chloroform inhalations for the convulsions or twitching and a dose of salts in the morning.

From 10 p. m. to 12 p. m. I am told the pulses had a tendency to become slow and weak. Those in attendance were obliged to rouse the patients and give stimulation and in many cases wash out the stomach again. A few had several stomach washings. The external surface was cold. After midnight there was nothing of particular interest upon the charts. The urinalysis next morning showed a trace of albumen with a few white blood cells in seven out of nine cases. One had a few red blood cells. There was a positive sugar reaction in two of the nine.

Following these cases of poisoning, Mr. Donnelly had all of the plants on the place dug up and he sent one of the plants to the State Agricultural College at Fort Collins. Prof. W. W. Robbins, the head of the department of botany, identified the plant as that of the water hemlock or cowbane (*cicuta occidentalis*).

In looking up other cases occurring in Colorado, I took the cases occurring in the spring of 1914. I have a record of four cases with three deaths from this cause that spring. In the death records of that spring, I found three other deaths from some unknown vegetable poison. As two of the cases were sick several days, I did not think it probable that it was due to water hemlock.

March 7th, 1914, Harold A. and his brother just older, who lived at 1475 South Cherokee street, ate some of the root of the water hemlock at 11:30 a. m. Harold became sick in about fifteen minutes, I am told, with pain in the stomach and then fell over in convulsions. He had a bloody froth from the mouth, the head was drawn forward and the eyes bent downward, with the eyes open and the pupils dilated. His face

was blue. The convulsions were nearly continuous until he died. The mother said he would relax once in a while, only to stiffen up again in about two minutes. He vomited only a little greenish fluid after she had given him some cream. The older boy, who had eaten less of the root, was given an emetic after the other one became sick. He vomited well, emptying his stomach, and was soon all right. Dr. R. S. Allen was called, but did not arrive until 1 p. m., just before the child was taken to the county hospital, where he died at 2:30 p. m., just three hours after eating the root.

March 29th, 1914, Joseph W., age two years and seven months, living at 2954 South Acoma street, Englewood, ate some of the water hemlock on his way home from Sunday school. A woman told me he was only sick a half hour before he died at 1:30 p. m. Dr. H. B. Catron of Englewood attended the case.

April 24th, 1914, Teresa B., a little Italian girl of six years, living at Segundo, ate some of the root of the water hemlock. She was sick only two hours and died at 9:40 a. m. Dr. O. T. Adams, Segundo, attended the case.

In the spring of 1914, Dr. W. J. LeRosignol of Rifle made inquiry about the nature of the poison of this plant of the Journal of the American Medical Association. He stated that some time previously he had had a whole family poisoned by eating the cooked root of this plant. His cases recovered under the use of emetics, purgatives and stimulants.

In regard to treatment, I notice in the case histories, as well as our cases at the State Home, that those who vomited and evacuated the stomach thoroughly at the beginning had a good prognosis. The poison is rather slow to be absorbed from the stomach, so if the stomach is evacuated, even some time after ingestion of the plant, it will often prevent a fatal termination. Witthaus and Becker, in their toxicology, recommend the immediate evacuation of the stomach by washing or by giving emetics. Of the emetics, apomorphine is best. The stomach should be washed out even if considerable time has elapsed since eating the root and also even if the patient has vom-

ited freely. To control the convulsions, hydrate of chloral, morphine and chloroform inhalations may be used. Stimulants and purgatives should be given.

The cicuta was used internally for medicine a little at one time in the early days of the homeopathic school, but was soon discarded. Some of the older United States Dispensatories mention it only to state that it is not used internally, but is used rarely as an anodyne poultice for local pains, particularly those of a gouty or rheumatic nature. The latest books do not mention it.

In recent years, the only investigations in regard to this plant which have been made have been through the agricultural experimental stations. They are well acquainted with this violently poisonous plant and its destruction in the cases of cattle and sheep. Nothing has been done, of recent years, in the investigation as to the human deaths caused by it. By feeding experiments with animals, the root has been proved to be the most poisonous in the early spring, but it is poisonous at all times of the year. Prof. Hedrick of the Oregon station stated in 1897 that the poison was only found in the underground portion of the plant. In the spring of 1900, the United States Agricultural Department carried on investigations with regard to it in Montana. It was found that there were five cases of poisoning that spring from eating the Wyoming variety, with four deaths. In May and June, there were thirty-six cases of poisoning among cattle, with thirty deaths. There were one hundred and five sheep poisoned, with fifty deaths. In Oregon it is estimated that there are one hundred cattle killed every year by this plant. It grows in wet places and in the spring the cattle and sheep, while eating the tops, easily pull up the roots and eat them also.

Prof. Hedrick of the Oregon Agricultural Experiment Station has further said that a piece of a root the size of a walnut is sufficient to kill a cow. A single root has been known to kill a horse in a little less than an hour. In very acute cases, animals may die in fifteen minutes.

The United States Agricultural Department established an experiment station in Colorado during the summers of 1910 and

1911. The experimental feeding was done during the months of August and September. It was undertaken to obtain a knowledge of the poisonous properties of this plant during the summer and early fall, also to find out whether it was poisonous in hay. They wished also to verify the description of the symptoms and the effects of the poisoning in the case of cattle and sheep. The station was called Mount Carbon and was located at the head of the Ohio Creek valley, where the *cicuta occidentalis* grows in abundance in the irrigated lands.

The results of this experimental feeding of cattle and sheep which was carried on at that time demonstrated that, at that season, the poison is contained in the root stock and that the tops and seeds are not poisonous to cattle and sheep under ordinary circumstances.

The symptoms of poisoning in cattle are in many ways similar to those in humans.

The findings at autopsies, on two head of cattle and one sheep, were as follows:

"The left ventricle was contracted and the right dilated, while the walls of the heart were more or less congested. The most marked feature was the extreme congestion of the venous blood vessels. The lung, kidneys and membranes of the central nervous system showed strong congestion. The mucous membrane of the trachea and bronchi was inflamed, as were also the inner walls of the small intestine and stomach and, in some cases, other parts of the alimentary canal. In the kidneys the congestion was most marked in the cortex and was accompanied with some nephritis. It was noticed that the red blood corpuscles in the kidneys were more or less broken down. Death resulted from respiratory failure."

Since the poisoning last spring, Prof. W. W. Robbins of the Colorado Agricultural Experiment Station has published a bulletin on "Water Hemlock, A Poisonous Plant" (No. 139) which is to be sent to every rural and urban school teacher in the state, in order that children may be warned against eating the root of this plant. The author wishes to make especial acknowledgement to Prof.

Robbins for references furnished in connection with the preparation of this article.

302 Majestic Building.

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DISCUSSION

Edward Jackson, Denver: It seems that a larger number of cases of poisoning have occurred than

have been reported. I have heard of two fatal cases that occurred in one family some years ago that were never reported, and probably there are others.

O. P. Shippey, Saguache: I want to compliment the essayist on bringing this subject to our attention, because this poisonous plant is everywhere present in the towns up in our country, where it is accessible to the children, who pull up the roots along the irrigating ditches in the towns and nearby, and our experience is that it is fully as important to us as it was to the doctor who saw fit to read this paper.

In one case my colleague washed out the stomach of a child, and I arrived some time after the child had begun to show symptoms of respiratory failure. Up to that moment we were in ignorance as to how to handle this case, but we saw in the forestry office a bulletin which stated that the wild parsnip is the hemlock as described here today, and in searching for an antidote for the case, all we could find was a little book of prescriptions with the statement that for water hemlock and for mushroom poisoning or toadstool poisoning the proper antidote was tannic acid, and after failure to successfully wash out the stomachs of the four children involved, we rushed down to the drug store and obtained a large quantity of tannic acid. We did not take any particular time to find out how much we should give, but we made a strong solution of tannic acid in a pint or more of warm water and forced it down the child's stomach and repeated it until we had a large quantity of the fluid there. Half an hour after we had repeated these efforts, emesis followed, so that one of the children showed some signs of improvement. Quite large pieces of hemlock were vomited, and I believe that success in handling these cases, even if it is impossible to remove portions that are still in the stomach, is due to giving plenty of tannic acid, and I believe you will save the children if respiratory paralysis has not progressed to an unfavorable point.

Dr. Stratton (closing): There is nothing more to add except to say that these cases really demonstrate that when the stomach is quickly emptied, the patients nearly all get well.

A METHOD OF HEMOSTASIS IN RESECTING PORTIONS OF THE LIVER.*

LEONARD FREEMAN, M.D., DENVER.

The following case-report illustrates two things, (1) the difficulties arising in the diagnosis of an abdominal tumor, in spite of the conscientious application of our most scientific methods, and (2) the use of a simple, rapid and effective method for the control of hemorrhage in resecting a portion of the liver.

A woman about fifty years of age, anemic to the point of cachexia, had been losing flesh and strength for several months, with indefinite pains in the right side of the abdomen. There were no bladder or bowel

symptoms, except moderate constipation, and the urine and stools were negative. A hard, irregular, movable tumor the size of an adult's fist could be felt in the upper part of the right iliac fossa, but it could not be outlined distinctly owing to rigidity and thickness of the abdominal wall. It was not connected with the uterus, and in fact was situated too high for probable association with any of the pelvic organs. The tentative diagnosis was a malignant tumor of the cecum, which was concurred in by Dr. J. N. Hall.

A bismuth meal was given and x-ray plates taken by Dr. Childs, which failed to reveal any definite lesion of the gastrointestinal tract, but seemed to indicate a tumor of the right kidney.

In order to make more certain of the condition, Dr. T. L. Howard catheterized both ureters. From the left side he obtained normal urine in appropriate amount, but upon the right, the side of the tumor, the urine was reported small in quantity and comparatively watery, indicating "hydronephrosis from a stricture or kink of the ureter".

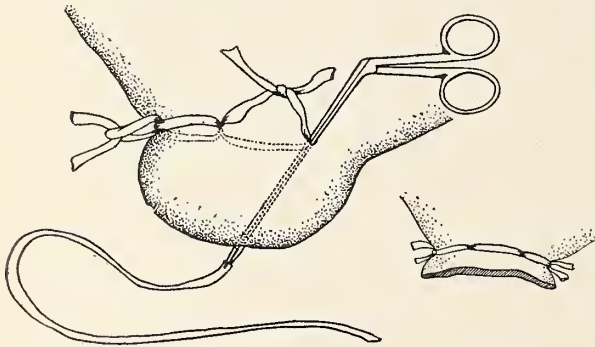
Collargol was then injected and another roentgenogram taken, which showed the pelvis of the kidney to be normal in size, thus leading to a probable diagnosis of tumor of the right kidney. This diagnosis was not regarded as positive, but was based largely upon the location of the x-ray shadow, the apparent absence of any bowel lesion, and the failure to detect anything indicating the presence of a kidney separate from the tumor.

An exploratory laparotomy was done on August 2, 1917, Dr. Howard assisting, the incision being in the right semilunar line. The tumor proved to be a cancer of the right lobe of the liver, involving the gall-bladder and the transverse colon in one mass, the cecum and ascending colon being free. The kidney was not compromised in any way, although it was dislocated sufficiently to lie directly beneath the growth, which accounted for the failure to detect it by either palpation or the roentgen ray. There were many inflammatory adhesions to the omentum and abdominal wall.

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

After determining that the growth was apparently primary and that no enlarged glands could be found, it was decided to remove it en bloc, together with the cecum, the ascending colon and half of the transverse colon.

In order to get well beyond the tumor it was necessary to resect a large portion of the right lobe of the liver, the line of incision passing through the entire thickness of the organ. Hemorrhage was controlled by tying off the part to be removed by means of two long narrow strips of fascia lata, like pieces of tape. These strips were first pulled directly through the substance of the liver, from behind forwards, with a pair of long alligator forceps, and their respective ends tied very tightly around the hepatic substance to either side, much as one would transfix and tie off the pedicle of an ovarian tumor. (The presence of the fascia soon checks any bleeding which may occur from the sides of the hole through which it is pulled, provided the opening is not too large; hence the importance of using alligator forceps, or at least those which are long and narrow.) The growth was then cut away, well within healthy liver tissue, without the slightest difficulty or bleeding, in spite of the great thickness of the hepatic stump.



The remainder of the operation, consisting of the division of the cystic duct and the resection of the cecum and colon, was rapidly accomplished without particular difficulty. The abdomen was closed with the exception of an opening for a cigarette drain down to the divided end of the cystic duct.

Recovery was rapid and uneventful, except for the persistence of a small sinus at the site of the drain. At the end of six

months there was a definite recurrence, springing, apparently, from the region of the cystic duct, which was observed to be considerably thickened at the time of its division, and the patient died from carcinoma about ten months from the date of operation.

The specimen was examined by Dr. Philip Hillkowitz, who reported carcinoma of the liver, probably originating in the gallbladder and extensively involving the transverse colon, the line of resection appearing to be well beyond the area of hepatic malignancy.

I wish to call attention especially to the method in this operation of controlling hemorrhage from the liver by means of strips of fascia lata, which, if it has been previously employed, is at least not generally recognized. I was led to adopt the procedure by an experience which I had some years ago. In 1904 I reported to the American Surgical Association a resection of a portion of the liver for a large primary adenocarcinoma.* Following the suggestion of W. Müller, I obtained very effective hemostasis by tying off the liver with strips of ordinary gauze tape; but the difficulty experienced in the subsequent extraction of the tape dissuaded me from using the method again, in spite of its otherwise admirable efficiency. No such objection, however, exists with fascia lata, as it can be left in place without fear of trouble arising later on. In addition, fascia lata is just as easily handled and just as effective as tape. It will not stretch and is so strong that it will withstand much force in tying.

The strips of fascia should be cut of ample length and about the width of a finger, so as to permit doubling once upon themselves. By means of hemostatic forceps they can be tied in place with an ordinary surgical knot, which is further prevented from slipping by tying over it a piece of catgut. In order to guard against the possibility of the fascial ligatures gliding off the moist surface of the hepatic stump when the tumor is cut away, it is well to take a few catgut

*There has been no recurrence in the case, the patient being alive and well at the present time.

stitches through the capsule of the liver and tie them over the strips.

There can be no question that the ease of application of this simple method of controlling hemorrhage in resection of the liver, and the sense of absolute security which it affords, are extremely gratifying. It converts a rather difficult and sometimes dangerous operation into a very simple one, and in addition the materials to be employed are always abundantly at hand.

424 Metropolitan Building.

DISCUSSION

H. S. Henderson, Grand Junction: I would like to ask Dr. Freeman one question, namely, when he resected the colon, did he do an ileosigmoidostomy, or how did he do it?

M. D. Shivers, Colorado Springs: I would like to ask Dr. Freeman how he treated the wound after resection of the liver; did he suture or pack?

Dr. Freeman (closing): The reason that fascia lata is of advantage in these cases is that the abdomen can be closed; and it was closed except for a small drainage tube, which was soon removed.

As regards the other question: An end-to-side anastomosis was made between the severed end of the ileum and the transverse colon. There was no intestinal embarrassment following the operation. Every one knows, of course, of the very extensive use of fascia lata, but I wish to call attention to one extremely useful thing for which it can be employed, and that is the suspension of the uterus in complete prolapsus. I have done this for five or six years and have had an opportunity to see what the ultimate outcome was. With the uterus suspended in this way it does not come down; it stays where you put it. It is a simple operation and is as devoid of danger as is resection of a chronic appendix.

DIET IN DISEASES OF THE BLOOD AND IN DISEASES OF THE THYROID.*

J. W. AMESSE, M. D., DENVER.

The desirability of assembling within small compass facts of proven value in the dietetic management of diseases of the blood will readily be recognized by those who have depended, perhaps too largely, upon our traditional therapeutic agents in combating these obscure disorders. Previous to the last decade or two, medical writers contented themselves with empirical suggestions for the exhibition of the salts of inorganic iron and of arsenic. With our increasing knowledge of the natural history of many of

these diseases, however, and with our clearer grasp of the chemical problems associated with the absorption of iron, the importance of a wholesome and well selected dietary becomes paramount. If we include the further hygienic factors to be considered in the management of constitutional disease, such as rest, fresh air, exercise, climate, baths and properly supervised recreation, our armamentarium is materially strengthened and the recognized tendency of these patients to follow false gods decidedly minimized. It has frequently been expressed that if medical research had been concerned more actively the past few years in the solution of therapeutic problems through diet, our results would perhaps be more satisfactory.

The inclination of the clinician is to stress the purely medical side of treatment in a given case, and leave to the nurse and kitchen attendants the selection and preparation of the food. It is needless to state that however efficient a nurse may be, she cannot safely direct the feeding of a patient unless she has (1) had special instruction over an adequate period in dietetics and (2) is familiar enough with the case she is attending to undertake the conduct of that patient's nutrition. The appalling ignorance of untrained assistants in the feeding of persons suffering, for example, from diabetes, acetonemia or one of the acute infections is an everyday observation, and only accentuates the necessity for a competent dietician in every modern hospital. Increasing numbers of well educated young women electing these and similar courses in the domestic science departments of our leading colleges reflect a healthy change of public sentiment in this matter.

Turning now to the specific field under discussion, the very importance of diseases of the blood cells calls for the exhibition of our undivided forces in their arrest and care. The environment of the patient, his daily routine, the control of factors such as fear, worry, anxiety and over-apprehension, should be subjects of most serious consideration. The maintenance of a dietary rich in food values, or the administration of ferruginous tonics eminently suited to an ab-

*Read before the Medical Society of the City and County of Denver, December 18, 1917.

tract case, will avail but little if the patient is obsessed by the fear of death, continually concerned about his business affairs, or is solicitous about some other member of the household. While no one with the most superficial knowledge of disease would unduly stress the mental attitude of the sick, yet the co-operation the practitioner receives from a patient with buoyant disposition and cheerful frame of mind is one of the best attested facts in medicine.

Another agency commonly overlooked in the treatment of these affections, yet of immense practical importance, is the influence of sound teeth in the restoration of health. Conversely, the sinister effect of carious teeth on digestion and assimilation cannot be emphasized too strongly. Probably the most important additions to medical literature during the past year have been those concerned with the study of focal infections, and, of these, invasions from diseased teeth are the most striking. The far-reaching influence of pyorrhea, and the disastrous consequence to health and life resulting from metastatic processes remote from the original focus, are matters of daily observation. Secondary to this, but of obvious significance, are the loss of appetite, and the interference with digestion through the contamination of the food by putrefactive bacteria and their products. The disability arising from such chronic intestinal intoxication prohibits, in a measure, the successful administration of local treatment, and thus a vicious circle is inaugurated which might readily be the deciding factor in any grave disease of the blood. Indeed, William Hunter ably supports his contention that the chief etiological factor in pernicious anemia is embraced in chronic septic infection of the gastrointestinal tract, originating in the mouth, in the stomach or in the bowel itself. In a number of cases reported by other writers, the incidence of chronic diarrhea was noted as a possible cause. Herter recommends high colonic irrigations in all cases of this disease. With reference to the theory of intestinal intoxication Osler states: "Bunting has shown that a picture very similar to that of pernicious anemia may be produced experimentally in animals by the

injection of small doses of ricin. The investigations of Schaumann and others have shown the bothriocephalus anemia to be a hemolysis caused by a lipoid substance that may be extracted from the segments of the worm. From the intestinal mucosa of persons dead of pernicious anemia, lipoid substances have been extracted with hemolytic action of remarkable potency, causing anemia of a severe and fatal type in animals."

The toilet of the mouth therefore becomes an important consideration in these cases. With children, it has long been noted that dental caries is a fruitful source of anemia. This depletion of the blood is produced not only by the poisons ingested, but through the inability to properly masticate. The harmful practice thus aroused of bolting the food is a common cause of indigestion, with great flatulence, perhaps diarrhea and, usually, very foul stools.

Inasmuch as iron, either in the form of organic or inorganic medicinal preparations, or in combination with foodstuffs, forms the basis of treatment for the majority of diseases of the blood, the consideration of the so-called "iron question" may properly be taken up at this point. Certainly, few problems in medicine have been the storm center for such continued and, often, such acrimonious controversy as those associated with the absorption of iron in the human body. It would appear, from a perusal of the literature, that physiological chemists are finally agreed on this matter. Meyer and Gottlieb¹ give a very lucid review of the experimental studies which have led to definite conclusions concerning iron metabolism. Abderhalden² discusses at length the modern conception of the fate of inorganic food stuffs in the alimentary canal. Bunge³ in his classical lectures, outlines the methods used to determine the origin of iron in the blood. (These authoritative sources, relieved somewhat of the hypertechanical nomenclature, are freely drawn upon in the presentation of the following data.)

Although iron has been used in anemic conditions for ages, its administration was not placed on a scientific basis until 1746, when Menghinis showed that this element was a constant constituent of the blood. He

ventured to assert that the ingestion of food rich in iron correspondingly increased the iron in the hemoglobin. The theories of Menghinis and his co-workers were challenged for several reasons. One group of clinicians assumed that the manifest increase in the hemoglobin or in the red cells which followed the exhibition of iron, even when other therapeutic measures were omitted, was possibly more apparent than real, inasmuch as the quantitative determination of iron, hemoglobin and the corpuscular elements had been made only in a given unit of blood. The increase noted could therefore easily be a relative one, following the concentration of the blood. As a matter of fact, prolonged fasting, a condition certainly not calculated to promote vitality, is accompanied by such an increase in the red corpuscles. A further objection to the view that the formation of hemoglobin was stimulated by the administration of iron was based on the physiology and toxicology of the drug itself. Iron, in the form of organic combinations with nucleo-proteids, exists in all food stuffs in amounts varying from a mere trace to a rather considerable quantity. Described by some as hemato-gens, these nucleo-albumins are doubtless absorbed by the mucous membrane of the duodenum and jejunum, and provide the organism with the iron constituents essential to health.

Aside from a few items such as milk, white bread, rice and certain fruits, the average ration contains sufficient iron for ordinary needs. With regard to the absorption of inorganic salts, the controversy has only recently been settled. In brief, it may be said that following the use of these preparations, iron may be demonstrated, both by histological examination of the intestinal mucous membrane and by the chemical analysis of the lymph from the thoracic duct. Meyer and Gottlieb assert that this can be shown forty-five minutes after introduction into the stomach of a .06 per cent solution of ferric chloride. Kimkel has disproven the theory long held that while these inorganic salts are actually absorbed by the upper bowel, they are promptly excreted in the lower bowel, and that their sole function

might be to combine with deleterious substances in the intestine possessing a strong affinity for iron; for example, the sulphides. His work seems to establish the fact that the excess of iron is stored up in the liver and spleen to be used in the synthesis of hemoglobin. Kimkel repeatedly bled two puppies of equal size and weight and of the same age, thus rendering them extremely anemic. He then fed both dogs on an exclusive diet of milk except that one received, in addition, a daily dose of six milligrams of iron in the form of the liquor ferri albuminati. After six weeks, one dog was still very anemic, the blood containing only 0.019 percent ferric oxid, and the entire liver only 0.004 grams of ferric oxid; while the other animal, receiving the iron, had progressed to recovery. Its blood contained 0.035 percent ferric oxid and the liver 0.032 grams of ferric oxid. These findings were subsequently confirmed by Cloëtta and by Abderhalden.

Not only may we now fairly conclude that the salts of iron are utilized in the production of hemoglobin, but we are also justified in assuming that they exert a specific action on the hemopoietic organs, e. g., the bone marrow, and probably on the metabolism of other tissues. For instance, Romberg has observed that in chlorosis the tissues contain an unusual amount of water, which disappears under the administration of iron. Fr. Müller reports that the bone marrow of animals, rendered anemic by bleeding, contains more nucleated red cells when iron is used than are found in cases where no iron is added to the normal diet. This specific stimulation of the elements which produce hemoglobin was noted by Trousseau, and emphasized by Harnack and von Noorden. It is interesting to note in this connection that the organic preparations of iron, now exploited so widely, do not seem to possess this latter property. Although hemoglobin derivatives, they are decomposed with difficulty and probably serve the organism much as does the organic iron present in food. In any event, they may be considered as of less value than the simple inorganic preparations.

According to Bertrand the very opposite holds true of arsenic, which ranks with iron

as a stimulant to the blood-making organs. The fact that he was able to demonstrate that arsenic is a constant constituent of living cells is significant.

With the therapeutic role of iron salts finally determined, it would seem a rational scientific procedure, in the management of the anemias, to select those food stuffs rich in iron, provided always, however, there is no antagonism on the part of the digestive apparatus. To this end, the medical attendant will bend every effort toward securing for the patient such freedom from oral, gastric and intestinal irritation and intoxication as will best fit him to profit by the regime instituted. Many authorities recommend foods rich in hemoglobin, such as rare meat, blood and beef juice. In this connection, the iron content of certain foods has been accurately determined by Bunge³ and published as follows:

One hundred grams of dried food contain the following amounts of iron expressed in milligrams:	
Blood serum .....	.0
Egg white	a trace
Rice	1.0 to 2.0
Barley	1.4 to 1.5
Wheat flour	1.6
Cow's milk	2.3
Human milk	2.3 to 3.1
Figs	3.7
Cabbage (inner leaves)	4.5
Rye	4.9
Almonds (peeled)	4.9
Wheat	5.5
Potatoes	6.4
Peas	6.7 to 6.6
Cherries (black)	7.2
Beans (white)	8.3
Carrots	8.6
Wheat bran	8.8
Strawberries	8.6 to 9.3
Cherries (red)	10
Hazelnuts	13
Apples	13
Dandelion leaves	14
Cabbage (outer leaves).....	17
Asparagus	20
Yolk of egg.....	10 to 24
Spinach	33 to 39
Pig's blood	226

Hematogen	290
Hemoglobin	340

The minute quantity of iron found in milk immediately provokes the inquiry, Why do not all babies rapidly become anemic? Bunge explains this readily by pointing out the relatively enormous amounts of this element stored up in the liver of young animals at birth. His experiments seem to indicate that there is approximately five times as much iron in the liver of the newborn as in that of an adult. This is expended according to the needs of the body, and is sufficient until foods richer than milk in their ferruginous content may be taken and assimilated. Toward the end of the first year, therefore, the addition of spinach, asparagus, beef juice and the yolk of egg to the diet of the baby will replenish the store of iron and effectually prevent the anemia so often noted at that period.

Lorand⁴, quoting Ascher, states that not only the liver but the spleen is vitally concerned in the assimilation of iron. He found that dogs, following splenectomy, eliminated more iron than healthy ones, and argues that this organ must control the retention of iron in the body. As a food, the spleen, commonly sold as "smelt" or "milt" is extremely rich in iron.

During the second year, raw meat or scraped beef may be introduced in the dietary, and if fresh vegetables are not well borne, they may be used with advantage in soup. König has demonstrated the great nutritive value of the egg, which in addition to an iron content amounting to 0.39 percent of the total volume, contains phosphorus, lecithin, lime salts and traces of arsenic.

With these general considerations in mind, we may proceed to a discussion of treatment in various disease conditions of the blood, from a dietetic viewpoint.

Diet in Diseases of the Blood.

Anemia. In anemia, from whatever cause, our aim is to restore the lost elements of the blood as rapidly as possible. Experience has shown that special feeding in conjunction with proper medication accomplishes this much more quickly than the use of iron alone.

In **post hemorrhagic anemia** the blood serum may be quickly restored to its original amount by the ingestion of fluids, such as broth and hot milk. Water must be freely administered, either by the stomach or, in the form of normal salt solution, subcutaneously, intravenously or by the bowel. The restitution of the protein elements requires a much longer period, and here the choice of a suitable dietary, together with the exhibition of non-irritating iron preparations, combine to hasten the patient's convalescence. As soon as possible, rare meat, eggs, green vegetables, and cereals should replace the liquid diet, and beef juice or albumen water be served between meals. Small quantities of solid food, served frequently, will tax the digestive apparatus less than the customary three meals of normal individuals. If these portions are preceded by *nux vomica* and followed by a moderate dose of dilute hydrochloric acid, digestion and assimilation are materially encouraged. The form of iron to be employed in these cases is largely a matter of choice among a number of excellent preparations, but certainly the inorganic salts seem most potent.

In **acute and chronic secondary anemia**, where the hemolysis is due to infection, sepsis or intoxication, the aim of the clinician is to remove the cause as promptly as possible. For example, the distressing anemia accompanying such diseases as malaria or uncinariasis will persist or increase until, through specific treatment, we have eliminated the etiological factors. No hematinic will be of value in the profound anemia seen in infections with the fish tape worm until the parasite is expelled. In rheumatic fever, typhoid and similar infections, as well as in cases of chronic poisoning with mercury, lead or arsenic, the blood making organs are not easily stimulated until the disease is arrested or the toxic elements removed. In addition to the use of iron or arsenic, and the careful supervision of the food, we have in these cases to insure also such hygienic requirements as will place the patient in the best possible condition to profit by such stimulation. These of course will include rest, fresh air, sunshine, massage and baths. The value of light table wines in

these conditions has been emphasized by Fitch and others.

Chlorosis. Although the cause of this peculiar anemia is quite unknown, there is unquestionably a diminished formation of iron rather than an increased destruction. (Tibbles.) The metabolism of protein in chlorosis does not seem to be disturbed. In nearly one hundred percent of the cases, however, there is hyperchlorhydria. The disease is most frequently seen in girls between the ages of thirteen and twenty, living under unfavorable conditions or suffering with chronic constipation. Sir Andrew Clark has especially stressed the latter symptom, and believes chlorosis to be simply a resulting intoxication. Whatever its origin, the pathology is chiefly concerned with the striking reduction of the hemoglobin. In ordinary cases this is usually diminished to half the normal amount, and in rare instances it may be less than twenty percent. Another unusual feature, first pointed out by Haldane and Smith, is the great increase in the blood plasma.

Notwithstanding its unusual manifestations, chlorosis is rightly included among those few disorders for which we have an absolute specific. Iron in this disease is comparable to quinine in malaria. Cabot says: "In any case of supposed chlorosis which does not yield readily to iron administered in the proper manner and in the proper dose, we have reason for doubting the diagnosis." Practically all authorities recommend in this disease the very reliable Bland pill, and Osler suggests that its use be continued for at least three months. Constipation is best treated by salines given on rising and the hyperacidity controlled with suitable alkalies.

The indications from a dietetic standpoint are to supplement iron with the most nutritious foods and to secure proper digestion and absorption through measures above suggested. Raw meat, chopped or scraped, is more easily digestible than cooked meat. Fresh fish, boiled or broiled, is valuable. Salt meats, salt fish, dried meats, vinegar, pickles, hashes, fried foods, citrus fruits, tart berries, confections, nuts, tea and coffee are forbidden.

The excess of plasma in the circulation would seem to call for a dry salt-free diet. The patient should be limited to not more than a liter of fluids daily, and only enough salt used to properly season such vegetables as potatoes. The saline purgatives may therefore serve an added purpose, in correcting the tendency of many of these patients to become edematous.

A mixture of equal parts of milk and carbonated water seems especially well borne.

Pernicious Anemia. Far different problems present themselves in the management of this variety of the primary anemias. Of unknown origin and insidious onset, subject to remissions and baffling changes in the clinical picture, it ranks among the most fatal diseases of mankind. Cabot reports but six instances of apparent recovery in a series of twelve hundred cases.

That the life of the patient may be prolonged, however, and a reasonable degree of comfort secured, through careful supervision of digestion and elimination, is attested by many clinicians of wide experience. In this disease, arsenic replaces iron as a therapeutic agent. It may be administered as Fowler's solution, atoxyl, sodium cacodylate or salvarsan; orally, subcutaneously, intramuscularly or in the vein. No considerable evidence has accumulated to show that it has any great influence in arresting the progress of the hemolysis. The fact that all observers note the frequency of gastrointestinal manifestations, such as sore mouth, gastric crises, nausea or vomiting and diarrhea, would seem to indicate that this system bears in many cases the brunt of the attack.

Moraczewski found that nitrogen, phosphorus, chlorine and calcium were badly assimilated. Nothnagel observes that the problem is primarily one of assimilation rather than feeding. In seventy-nine cases studied by Cabot, in which the gastric juice was analyzed, only one case showed any considerable quantity of hydrochloric acid. The necessity for a careful choice of foods, therefore, will be apparent. Bone marrow has been recommended by many writers, following Barrs, who suggested using the red marrow of calves rather than of oxen.

It is best served raw, with stale bread, and seasoned. The spleen and liver may also be used, these being rich in nucleo-albumins containing iron.

The intestinal indigestion, commonly present in these cases, is best treated by the use of Bulgarian buttermilk, kefir, koumiss, or some similar preparation of fermented milk. Klemperer and Ebstein employ large amounts of cream and butter with the object of increasing the essential lipid, cholesterolin. While there is no special evidence that diet, per se, modifies the course of the disease, the following suggestions from Smith⁵ have been found of genuine value.

Diet List in Progressive Pernicious Anemia.

Breakfast, 7 a. m.

Fruit—apples (baked, raw or stewed), apple sauce, stewed pears, peaches, apricots, prunes, berries of all kinds in season; cereals; steak or chops, breakfast bacon, broiled honeycomb tripe, broiled chicken, calves' liver and bacon, fish (any kind in season), broiled or baked in cream; baked potato with plenty of butter, toasted bread with butter, coffee with an egg beaten up in it, milk or cocoa.

10 a. m.

Koumiss or milk.

Dinner, 1 p. m.

Soups (preferably purees)—potato, celery, tomato, peas, corn; roasts—lamb, beef, chicken, quail, partridge; vegetables—Irish potato, lettuce, spinach, stewed celery, cauliflower, parsnips, beets, carrots, squash, string beans, new green peas, tomatoes, cucumbers (cut thin as tissue paper); stale bread and butter, cooked fruit, light puddings—tapioca, apple tapioca, junket, bonny clabber, apple sago, baked custards of all kinds, blanc mange; one cup of tea or cocoa.

4 p. m.

Milk, egg or beef albumen.

Supper, 6 p. m.

Cereals as above; soups as for dinner, clam or fish chowder; fish or eggs if not taken for breakfast; stews—lamb, beef, chicken; baked potato with butter; stale bread, dry toast, or pulled bread with plenty of butter; fruit as for breakfast (preferably cooked); one cup of tea, cocoa or milk.

9 p. m.

One glass of milk or koumiss.

Suggestions.

Beef albumen may be given in doses of two ounces, twice daily.

Eat slowly, and thoroughly masticate the food.

Do not drink during the meal.

Buttermilk, kefir or koumiss should be taken between meals and at bedtime, when milk is not well borne.

At different periods in the day, the white of an egg may be given in orange juice two or three times, or milk in some form.

Leukemia. Cabot's contention that in every case of leukemia, the entire hemopoietic system is involved, is well supported by the reports of numerous observers. Like pernicious anemia, its onset is gradual and the serious import of its initial symptoms not often recognized. It is essentially fatal, acute cases dying usually within three months and the chronic invasions continuing from six months to four or five years (Osler). Gastrointestinal derangements are not so common as in pernicious anemia; they appear later in the disease and are more easily controlled.

Arsenic, benzole and the x-ray are used in the treatment of leukemia, and the diet used in chlorosis, i. e., one rich in protein, is recommended. A decided increase in the excretion of nitrogen noted in most cases, would indicate the free use of such food stuffs, but the condition of the digestive tract must always be considered.

Purpura. Purpura, in its various forms, may be considered a symptom rather than a distinct disease, yet writers agree that the condition, until proper classification can be made, demands special recognition. It has been defined as a spontaneous hemorrhage into the skin or the mucous membranes, in contradistinction to the secondary purpuras seen, for example, in the acute infections. It occurs most commonly in the male sex and in the second decade of life. There is a constant and remarkable reduction in the blood platelet count, and retraction of the blood clot does not usually occur. Magnus-Levy and Edsall found serious departures from normal metabolism in cases studied.

Of the many types of purpura, the hemorrhagic form is the most common. The treatment of the condition involves the management of the underlying cause. It includes good hygiene, rest, hydrotherapy, the use of calcium and iron, and good food. Pratt recommends a light and varied diet during the active stage, and the addition of meat, green vegetables and eggs during convalescence. Antiscorbutic agents, such as lime juice, are indicated.

Hemophilia. Although properly classed among the diseases of the blood, hemophilia is a congenital affection, distinctly hereditary and characterized by severe hemorrhages from the slightest injury. The nature of the disease is as yet unknown. In the treatment, salts of calcium, especially calcium lactate, have appeared to render good service. No extensive experimentation or observation has been made concerning the rôle of diet in the management of the hemorrhages or its influence between attacks, but the citrus fruits are recommended by many writers and an exclusive milk diet by others.

Diet in Diseases of the Thyroid.

On first examination, it would seem that any serious consideration of the effect of diet in the evolution of these obscure affections must be so essentially theoretical as to render it of little value for the practitioner. Careful inquiry, however, shows that many significant facts have been brought out in the past few years in the intensive bio-chemical studies of the thyroid. It has now been fairly well determined, for example, that the functions of this gland have a notable influence on the metabolism of carbo-hydrates, through control of the pancreas; that the thyroid effects protein metabolism by direct action on the liver; and that calcium metabolism is regulated through its stimulation of the parathyroids.

Reid Hunt⁵ has reported in detail the effects of a restricted diet and of various diets upon the resistance of animals to certain poisons. His experiments seem to indicate that certain diets have constituents useful in building up materials in the thyroid which are able to combine with iodine or which increase the iodine receptors of the

thyroid. In other words, it is possible to influence, in a measure at least, one of the most important hormones of the body, through the food.

Hunt has also shown⁶ that the resistance to a poison, such as methyl cyanid, is much greater in mice fed on oatmeal or on oatmeal and liver than in those living on a diet of eggs, crackers and milk. On removal of the thyroid, however, it was found that the resistance to the poison was lowered fifty percent in the first group, while it was not affected at all in the animals of the second group. The thyroids of the mice living on oatmeal and liver were large and vascular, bleeding freely, while those of the egg-fed mice were shrunken and anemic.

From the exhaustive study made in the U. S. Hygienic Laboratory we quote the following summary:

" the experiments show that foods such as enter largely into the daily diet of man have most pronounced effects upon the resistance of animals to certain poisons; they produce changes in metabolism which are not readily detectable by ordinary methods. The ease and rapidity with which certain changes in function are caused by diet are in striking contrast with the essentially negative results obtained by the chemical analyses of animals fed upon different diets."

The important functions of the thyroid seem inextricably associated with its iodine content, although the quantity in a single gland does not amount to ten milligrams. Dock states that the quantity of iodine ingested daily in the food of the average adult is about one-third of a milligram. It is necessary therefore for the intelligent management of diseases of the thyroid to have some knowledge of the iodine content in the various food stuffs known to contain appreciable quantities of this element. Tibbles publishes the following tables:

Iodine in Plants.

Potatoes, carrots, endive, parsley, nil; cucumber 0.012, kidney beans 0.013, pumpkin 0.017, spinach 0.021, sorrel 0.047, melon 0.060, tomatoes 0.070, green peas 0.084, lettuce 0.096, beans 0.140, chervil 0.140, beet-

root 0.140, radish 0.160, turnip 0.240, French beans 0.320, milligrams per kilo.

Iodine in Fish.

Gudgeon 0.1, ray and skate 0.2, mackerel, whiting and pike 0.3, sardines, herring, carp, and mullet 0.6, shrimps 0.7, periwinkle 0.75, sole, eel, and herring roe 0.8, coal-fish 0.9, cod, roach, bream, ling and gurnard 1.2, oysters 1.3, salmon 1.4, milligrams per kilo.

In addition to a diet rich in iodine, for the correction of such disorders as cretinism and myxedema, the use of the glandular animal extract has become universal. Here, too, the influence of diet on the iodine content in the thyroids of sheep, cattle and hogs is most striking. Hunter and Simpson⁷ have called attention to the seasonal variation in the amount of iodine found in the thyroids of sheep. In the winter season, these animals, in the Orkney group of islands, subsist to a considerable extent on sea weeds, and the iodine content of their thyroids is enormously increased. Seidell and Fenger⁸, in this country, confirmed these findings, which must certainly have some weight in the standardization of thyroid extract.

Taking up seriatim the most important diseases of the thyroid gland, we may consider:

Goiter. This is a disease of unknown causation marked by a gradual enlargement of the gland. It usually appears at about the time of puberty and is six or eight times as common in females as in males. The indications are to use thyroid extract and foods rich in iodine. Inasmuch as simple goiter seems often to be associated with the use of water from certain wells or regions, boiling the water would seem to be a logical measure of prophylaxis.

Exophthalmic Goiter. In these cases the enlargement of the thyroid is accompanied by nervous disturbances of a profound character, exophthalmos and very rapid heart action. It is probably more common than reported; appears in females in about the same proportion as simple goiter when compared with males, but later in life, and its etiology is still obscure. The treatment resolves itself into absolute rest, hydrotherapy, fresh air and diet, until surgical in-

tervention can be secured. The marvelous results achieved by surgery in these cases make it obligatory on the medical attendant to recommend it in all cases.

Observations show that oatmeal, liver, meats of all kinds, fish, lobster, tea, coffee, alcohol and tobacco stimulate the gland and should therefore be interdicted. A milk diet, especially the milk of thyroidectomized animals, is recommended. All disorders of digestion must receive careful attention and over-feeding be avoided. The use of the thymus gland as a food is advised by a number of writers.

In conditions of hypothyroidism such as **cretinism** and **myxedema**, the very opposite method of feeding is pursued. Thyroid extract, begun with small amounts and increased cautiously, must be classed here as a specific. Foods which excite the thyroid, mentioned above, are to be continued indefinitely.

624 Metropolitan Building.

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INFLUENZA VACCINATION AT THE DENVER CITY AND COUNTY HOSPITAL.*

MAURICE KATZMAN, DENVER.

During the early part of October, 1918, this city was visited with the dread scourge of "Spanish influenza" which was then traveling across the country. Coincident with the rearrangement of the wards of the hospital for the purpose of isolating and treating influenza patients, the laboratory department rearranged its routine so that every available means could be used for the better management of these cases. With this purpose in view the laboratory work was divided into six groups as follows:

Group 1. Diagnosis; the routine laboratory examinations plus any special test or culture necessary.

Group 2. Prognosis; as determined in the previous group, aided by repeated examinations.

Group 3. Complications; as in checking unexplained rises in temperature.

Group 4. Therapeutics; preparation and administration of convalescent serum, administration of various stock sera, therapeutic phlebotomies in cardiac embarrassment, therapeutic vaccine treatment and various other kinds of intravenous medications as needed; these being given in conjunction with the house staff.

Group 5. Autopsies; done on several cases to solve unexplained physical findings and for study.

Group 6. Prophylaxis; the preparation and administration of vaccines.

This report concerns itself with group 6 only. The hospital management deemed it wise to extend the services of the hospital outside the hospital walls and offer to the general public such aid as it could. In this crisis especially, the hospital laboratory could be of aid in preparing and administering vaccines. The vaccine used was a suspension of killed hemolytic streptococci. This vaccine was chosen by the laboratory for certain definite reasons:

1. In the fatal cases of Spanish influenza, the streptococcic infection seemed to predominate.

2. The exact etiology of the disease was not known and many claimed it to be a streptococci infection.

3. The vaccine came very highly recommended. Credit must be given to Mr. Q. C. Tucker of Fort Lyon who called attention to the advantages of this vaccine.

Preparation of the Vaccine: Cultures of streptococcus hemolyticus for this work were obtained from Admiral Barber of Fort Lyon. The vaccines were prepared according to directions accompanying the cultures. Nutrient blood agar was used as the culture medium. This was prepared by adding 3% washed human red blood corpuscles to nutrient agar in tubes. These were added to the melted agar at a temperature of 45° centigrade, the tubes slanted and allowed to

*Read before the Staff of the City and County Hospital, Denver, February 13, 1919.

cool. When the medium had solidified, the tubes were tested for sterility by incubating for twenty-four hours. They were then inoculated with the cultures with a spiral movement of the wire loop so as to cover a large area of the surface of the medium, yet at the same time avoid mass cultures. After an eighteen-hour incubation, the microorganisms were removed and suspended in physiological saline solution. These were then diluted and standardized, a preservative was added and the vaccine bottled in rubber capped containers. The organisms were then killed by subjecting the vaccine to a temperature of 60° centigrade for an hour, in a water bath. All vaccines were standardized four hundred million to the cubic centimeter.

The adult dose was 0.25 cubic centimeter, representing one hundred million killed organisms. Children received 0.01 cubic centimeter per year of age. Tuberculosis and pregnancy cases received the same number of microorganisms but these were given in four doses. The vaccine was given in three doses, forty-eight hours apart. The doses were of the same strength at each inoculation.

Reaction to the vaccine: There were no untoward reactions in any of the people vaccinated. In an occasional case there was a severe local reaction which passed off in less than forty-eight hours. No abscesses developed in any of the cases. In a few cases some general symptoms developed such as headache, backache and a feeling of malaise. These passed off in forty-eight hours. Women, children and tuberculous patients bore the vaccine as well as if not better than robust men.

Control of vaccine for statistical purposes: With the decline of the epidemic and the arrival of the Christmas holidays, the vaccinations were stopped. In all 980 were vaccinated at the hospital from November 28 to December 23, 1918. Many more than this were vaccinated by private physicians with vaccines furnished free by the hospital, but because of the impossibility of an accurate check these statistics cannot be used for comparison in the following part. The hospital vaccinations were absolutely controlled for statistical pur-

poses. With the first inoculation, the party vaccinated was given a numbered ticket which he brought with him at the subsequent inoculations. When inoculated the third time he signed the ticket and left it at the hospital. Six weeks after giving the vaccine, follow-up cards were sent to the people vaccinated. These follow-up cards were made as simple as possible compatible with the information desired. There were but six questions to be answered, yes or no, and a space for the signature. By the records on the entry books, the inoculation slips and the signed return cards it was possible to obtain a very accurate estimate of the effect of the vaccine.

Effect of vaccine: Eight hundred and sixty-seven cards were returned of the nine hundred and eighty cards sent out. Of this number thirty-six had influenza following the full course of vaccination, and three pneumonia. There was but one death. Thirty cards were returned unclaimed. Fifty-six did not have the three inoculations. Of these nine had influenza. In all cases where influenza developed there was a direct exposure to the disease by nursing cases, or by the presence of the disease in other members of the household.

Analysis of Results: Knowing well the pitfalls of the encroachment of personal prejudices in the preparation of statistics it was endeavored to scrupulously avoid prejudices and testimonials, good and bad, in the following comparisons:

Analysis of the hospital cards shows that in nine cases influenza developed after the second inoculation. This makes a total of less than one percent of those vaccinated, exploding a common fallacious idea of increased susceptibility to influenza during a negative phase of the vaccine reaction. None of those who were not directly exposed in the home or place of residence got the disease. There were but three pneumonias in a total of forty-eight influenza and pneumonia cases, or six and one-quarter percent.

Conclusions:

1. Vaccination did not predispose to the disease.
2. No case developed influenza that was not directly exposed to the disease.

3. The prophylactic vaccine as used by the hospital was of definite value in lowering morbidity and mortality rates.

City and County Hospital.

News Notes

On April 14th, a luncheon was given at the Shirley Hotel, Denver, in compliment to Dr. Wm. J. Rothwell, by fellow alumni of the Jefferson Medical College. The luncheon marked the retirement of Dr. Rothwell from active practice and his departure for Utah, where he will make his future home with his sons. The occasion called up delightful reminiscence and appreciative recognition of Dr. Rothwell's share in the work and advancement of our profession, during his thirty-two years in Denver, and closed with kindly expressions of good wishes for the future.

The company included, besides Dr. Rothwell, Drs. Wm. C. Bane, Samuel Miller, Shollenberger, Spivak and Miel.

Captain Carbon Gillaspie of Boulder has received an honorable discharge from the Medical Corps. He was expected to return home (from Camp Travis) early in May and resume practice.

Dr. H. W. Wilcox of Denver, who received an honorable discharge from the army medical corps and returned home some time ago, has resumed practice at 302 Majestic building.

Dr. W. P. Harlow, commandant of U. S. army general hospital No. 21, Aurora, has been promoted to the rank of lieutenant colonel.

Captain S. Simon of Denver has been transferred from the general hospital No. 19, Azalea, N. C., to No. 21, Aurora, Colorado.

Lieut. T. F. Long, (M. C.) U. S. N. R. F., who practiced in Denver before going into the navy, has been transferred from the U. S. S. Yorktown to the Denver Naval Recruiting Station to assist in demobilization work.

A card received, April 23, from Dr. L. J. Weldon, of Minneapolis, showed him to be at that time in Rochester, Minn.

Dr. L. H. Ruegnitz, of Denver, has been honorably discharged from the Medical Corps and has resumed practice in Denver.

Dr. Philip Hillkowitz received an honorable discharge from the army in the latter part of April and is again in Denver, where he has resumed the practice of bacteriology and pathology at his old office in the Metropolitan building.

Dr. John W. Thompson of Pueblo has returned from Vladivostok, Siberia, where he served with Evacuation Hospital No. 17. He will resume the practice of ophthalmology, in association with his brother, Dr. Henry M. Thompson, at Pueblo.

Dr. Karl Roehrig has been honorably discharged from the army medical corps and has resumed practice in Denver.

Dr. T. A. Davis of Portland has been honorably discharged from medical corps service at Camp Cody and has returned home for the resumption of practice.

Word has been received from France that Dr. Crum Epler has been promoted to the rank of Lieutenant-Colonel.

The United States Public Health Service estimates that over seven million people in the United States are infected with malaria, and that in the South the ravages of typhoid fever, tuberculosis,

hookworm and pellagra, all together are not as serious as those caused by malaria.

Dr. Meville Black of Denver, who left early in April for a six weeks' pleasure trip in California, is expected home the 18th of May, and will resume practice on the 19th.

The associates of Dr. J. N. Hall have had the pleasure of welcoming him back to Denver. Dr. Hall has been honorably discharged from the service and has resumed practice at 452 Metropolitan Building.

Dr. W. S. Craghead of Denver is attending clinics in the Illinois Post Graduate Medical School of Chicago.

Capt. E. B. Swerdfeger has been assigned to the Sarbonne University, Paris, where he will remain until the latter part of June. His correct address is: 11 Rue de Helder, Hotel Richmond, Paris, France.

Capt. C. G. McEachern of Denver has been transferred from the Aurora general hospital to Ft. Sill, Oklahoma.

Lieut. S. S. Goldhammer of Denver has been transferred from Ft. Des Moines to Ft. Bliss.

Drs. C. E. Morris and C. A. Davlin of Alamosa have formed a partnership through which the facilities of the San Luis Valley and Alamosa hospitals will be combined.

Capt. Paul L. Leyda of Lafayette has returned home, having been honorably discharged from the medical corps of the army.

Capt. H. B. Killough of Pueblo has returned to this country from Orleans, France, where he was connected with base hospital No. 94. He is expecting an early discharge from the service.

Dr. H. L. Richardson of Silverton has returned home from Camp Lewis, having been honorably discharged from service.

Dr. C. G. Hickey of Denver has been elected president of the new state board of health, and has also been made acting secretary pending a permanent appointment for the latter office.

Dr. C. W. Poley of Boulder has been appointed health officer of that city.

Dr. C. S. Phalen of Salida, now in France, has been promoted to a captaincy.

Dr. W. D. Fleming of Boulder has received a permanent appointment as regimental surgeon in the Reed Hospital, Washington, D. C., with which institution he has been for the past nine months.

Dr. D. H. Coover of Denver left in the early part of April for a month's visit with his son in Los Angeles, Calif.

Dr. J. F. Snedec of Pueblo, now in France, with the 68th field hospital of the Rainbow Division, has been promoted to a captaincy.

Dr. R. G. Packard of Denver is now a major and is located in the orthopedic hospital in Bordeaux, France.

Dr. G. B. Packard, Jr., of Denver, has recently been assigned to the University of Bordeaux, France, for a three months' course in surgery.

The government will provide sanatorium and hospital care for all the boys discharged from army or naval service, in so far as their sickness or disability was contracted in the service of their country. The United States Public Health Service has already undertaken this stupendous task and is busily engaged in enlarging its hospital facilities all over the country. One of the sanatoria will be located at Dawson Springs, a famous health resort in Kentucky; the location of the others has not yet been determined.

Nineteen American women doctors are now in the Balkans, assisting the American Red Cross in its work of caring for the sick and destitute. These doctors are from the American Women's

Hospital at New York and are located in Serbia, Montenegro and Albania. Their work has earned the warmest commendation of the government. Some of them have received decorations or been cited for conspicuous service among the soldiers and refugees.

El Paso County News.

Dr. Loyd R. Allen, Dr. Loomis, and Dr. J. H. Brown have returned home, having been honorably discharged from the medical corps.

Dr. Frank T. Stevens is in New York City taking post-graduate work in nervous and mental diseases.

Letters From Army Men.

Part of a letter from Dr. Robert G. Packard, March 20, 1919, Bordeaux, France: "Since last writing you I have been traveling some more. I was glad to be able to get back here to Bordeaux from Perigueux the first of February, because practically all the orthopedic work at the latter center finished upon that date. So I returned to 114. Then my roommate and I requested a fourteen-day leave, which we were fortunate in getting. We went by way of Paris again, over to Chamouix right under Mt. Blanc, where we found the snow some four feet deep, I suppose. And we tried the art of skiing and managed to fall as often as anyone else. From Chamouix we went on south, stopped a day at Aix-les-Bains, one day at Grenoble, a night at Digve, from which latter point we took a narrow gauge train for Nice. That was one of the most scenic trips I have taken in France and was delightful all day long. On arriving at Nice we had considerable difficulty in finding a hotel accommodation because American officers are there by the hundreds. But we did, and remained there six days. One day was devoted to an automobile trip to Monte Carlo, Monaco, Mentone and the Italian border; and after seeing the wonderful views of the Mediterranean Sea and of the Alps right near, I must admit Colorado is not quite so wonderful. That is my honest impression.

We enjoyed our vacation at Nice immensely, had a mighty fine rest and came back to Paris on an American train, that is, a French train exclusively for the use of American officers. Then from Paris back to Bordeaux and our leave was ended.

Then I stayed here about two weeks (incidentally meanwhile getting a promotion to major), and was ordered up to Le Mans for a week of instruction. Le Mans is a short distance west of Paris, and is at present the largest embarkation center for troops. And now again I am back at Bordeaux and am liable to be sent to Embarkation Camp here for setting up classes in special shoe fitting, etc., but just at present am back on the job at the hospital.

As to getting back, I do not know when our hospital will be getting out, probably April or May. This center is still full of patients, but when we do once receive our orders, I understand No. 121 will take over all our patients and equipment. So we don't have to get rid of our patients, but we do have to get our orders. Meanwhile everyone of us is absolutely crazy to get back home."

Major Crum Epler, now at U. S. A. evacuation hospital No. 8, A. E. F., A. P. O. 767, France, writes as follows:

"We are busy here, evacuating and receiving daily, running full capacity all the time.

"Since we left the advance section at Belfort have been here evacuating to the States direct through St. Nazaire. It is a real business, but

the surgical end is practically nothing. The medical end is heavy.

"It is expected that we will conclude our work here about May 1st, and then, no one knows."

Capt. E. D. Burkhard, writing from the U. S. general hospital, Ft. Ontario, N. Y., says: "My unanimous vote of thanks to the Colorado State Medical Society for membership card for 1919, which reached me a few days ago.

"Since Major Hall and I parted in Camp Logan, Texas, I haven't met a Colorado man. It would be good for sore eyes to see a Coloradoan again—especially in Colorado Sunlight! I have a very busy ward in this hospital, almost entirely overseas cases, and I am enjoying the work. Fort Ontario is practically in the city of Oswego. It is a general hospital of about one thousand beds, beautifully situated on a low bluff directly on the lake shore. Really a very pretty place and in a few weeks will undoubtedly be well described as "beautiful." The vicinity is fairly reeking with history-dating back just about two hundred years."

Leader of Red Cross Nurses Dies.

Miss Jane A. Delano, who died April 15th, at Base Hospital No. 8 at Sauvigny, France, was one of the foremost figures of the nursing world. It was under her direction that more than 30,000 nurses were recruited through the American Red Cross for service with the Army and Navy after the United States entered the great conflict. She was born in Watkins, New York, in 1862, was graduated from Bellevue Hospital, New York, in 1886, and two years later rendered her first patriotic service to her country by volunteering to nurse yellow fever victims in Jacksonville, Fla.

When the American Red Cross, following the reorganization in 1903, entered into an agreement with the American Nurses' Association for the purpose of developing a nursing reserve for the Army Nurses' Corps, Miss Delano was appointed chairman of the committee in charge of the work.

She was also named as superintendent of the Army Nurses' Corps by the Surgeon General in which capacity she visited the Philippine Islands, China, Japan and Hawaii. Due to her untiring effort, eight thousand carefully selected nurses were available for government service at the time the United States entered the war, and her leadership was largely responsible for the success of the nurses' recruiting campaign which followed.

Miss Delano served the American Red Cross from first to last without compensation—a full-time volunteer.

At a regular session of the United States Federal Trade Commission held in Washington, D. C., March 10, 1919, the complaint against the Victor Electric Corporation, which included a charge of combination in restraint of trade, was ordered dismissed and discontinued.

Medical Societies

CITY AND COUNTY OF DENVER

The regular meeting of the **Medical Society of the City and County of Denver** was held Tuesday evening, April 1, 1919. President Jackson was in the chair.

Drs. Frederick Henry Weber and W. Eason Williams were elected to membership in the society.

The secretary read an invitation to the members of the Colorado State Medical Society to attend

the June meeting of the Nevada State Medical Society.

The scientific program began with a paper by Dr. E. W. Perrott, Jr., on the new wound treatment which has been proposed by Dr. Robert Donaldson, of England. He began his paper with a review of the treatment of wounds by the antiseptic, physiologic and surgical methods. Among the physiologic methods is the salt pack form of treatment. It was through the use of the salt pack that Dr. Donaldson got his idea of a new or biologic treatment of wounds. He noticed the peculiar odor connected with the successful treatment of wounds by the salt pack. Upon investigation he found the wounds having the peculiar odor contained a bacillus which he called the Reading bacillus. This bacillus is spore-bearing, saprophytic, anaerobic, proteolytic and non-pathogenic and produces no toxins of any kind. The action of the Reading bacillus is to break down all dead tissue and destroy the toxins of other bacteria. Dr. Donaldson advocates the use of the salt or moss packs, which should be left in place nine or ten days. Upon removal of the packs all dead tissue is gone and the wound is covered with healthy granulations.

This is due to the action of the Reading bacillus.

Inoculation of the Reading bacillus in severe wounds which did not have the distinctive odor mentioned and were not doing well, resulted in the favorable healing seen in the odorous cases.

Dr. E. F. Dean, who had spent six months in France, opened the discussion by giving the treatment with Dakin's solution, as he had seen it in France. He there had heard of Donaldson's method of treatment and he understood that the salt or moss packs were from two to six inches long by two fingers wide, and they were left on from two to seven or eight days. The claim is that with this method there are no secondary hemorrhages, while with Dakin's solution there may be secondary hemorrhages which sometimes may be severe. Further discussion was by Drs. W. W. Grant, O. S. Fowler, Edward Jackson, G. W. Miel and J. D. Gibson. Dr. Jackson called attention to the fact that the wound had to be opened freely, as the action of the bacillus cannot go through sound tissue.

Dr. Charles S. Elder next read a carefully prepared paper upon Two Principles to Be Observed in Operations for Inguinal Hernia. The two principles as he gave them were: First, the complete removal of the sack; Second, the value of muscular tissue in prevention of the recurring of hernias. The latter is obtained by the contraction of the abdominal muscles. The muscles as they contract shorten, thicken and become more capable of resisting abdominal pressure. Muscular tissue is the main tissue which prevents hernia, while the function of the fascia is to hold the muscle together. Dr. Elder believes that all openings through which a hernia protrudes should be closed by muscle covered by fascia.

Dr. W. W. Grant spoke of the prevalence of hernia in recruits, and said it disqualified for any place in the army. He said that many able-bodied men had been rejected at Ft. Logan before he received permission to operate. After that many men were operated upon with a great saving of man force to the nation.

The discussion of these two papers was opened by Dr. O. M. Shere, who thought both muscle and fascia should be used in closing the canal, but emphasized preservation of the inguinal nerve. The papers were further discussed by Drs. O. S. Fowler, Leonard Freeman and G. M. Anderson.

MARY R. STRATTON, Reporter.

The regular meeting of the **Medical Society of the City and County of Denver** was held April 15th, 1919, President Jackson in the chair.

Dr. Lewis I. Miller showed a male patient nineteen years old, presenting a case of congenital wide separation of the pubic bones and complete epispadias. There was an exstrophy of the bladder wall the size of a small hen egg, and upon lifting it up the trigone of the bladder and the ureteral openings could be seen. The corpus spongiosum appeared to be completely absent. There was constant dribbling of urine from the ureters. This condition had remained uncorrected since birth, the patient having been advised to avoid the doctors. X-ray plates exhibited by Dr. F. B. Stephenson showed the entire absence of a symphysis of the two pubes existed. Dr. Miller stated of about seven centimeters. The pubic rami were complete and joined on either side but no symphysis of the two pubis existed. Dr. Miller stated that he would report later a complete study of the case.

Dr. Fowler presented a case of a boy twelve years old who two years previously had sustained a compound fracture of the humerus. When the case came to Dr. Fowler, two or three months ago, there was a sinus in the upper arm leading to the bone which had been discharging for a long time. There was almost complete ankylosis of the elbow. There was an area on the lower arm, midway between the elbow and the wrist, denuded of skin and indolent in healing. This area of the lower arm showed an atrophy of the soft parts due, probably, to constriction by previous casts, and resulting also in a partially flexed wrist with inability to extend the hand. Dr. Fowler proposed first, to skin graft the lower arm with an abdominal flap of skin, later to make a new elbow joint, and finally to correct a twenty-five degree angulation in the humerus, if this proved necessary for proper function. X-ray plates exhibited by Dr. F. B. Stephenson showed an area of necrosis in the humerus, the site of a sequestrum which recently had been extracted; bony ankylosis of the elbow; abnormally small diameter of the ulna and radius, this probably due to the long enforced inaction of this part. The lower epiphyses of these two bones appearing normal, it was Dr. Fowler's opinion that the lower arm would continue to grow in length. The corrective operation was considered justified by the age of the child.

The meeting was then addressed by Dr. S. Adolphus Knopf of New York, upon the Prevention of Relapses in Cases of Arrested Tuberculosis among Soldiers and Sailors.

After speaking of the frequency of relapses among those who are sent home from sanatoriums, not due to any fault of the sanatorium physicians, but rather to the patients' insisting upon leaving sooner than it was desired they should do, Dr. Knopf continued: "The patients that are discharged or discharge themselves as arrested or nearly arrested cases, are not considered even 'apparent' cures. The definition of the term 'apparent cure' is that all constitutional symptoms and expectoration with bacilli shall have been absent for a period of at least two years under ordinary conditions of life. An 'arrested' case is one in which all the symptoms, expectoration and the bacilli have been absent for a period of six months, and physical signs are those of a healed lesion. An 'apparently arrested' case is one in which all constitutional symptoms and expectoration with bacilli have been absent for three

months, the physical signs being those of a healed lesion.

"For a long time I have asked myself, What can and should be done in order to shorten the period between the time when a case is arrested and when it can be considered cured? I have already absolved the sanatorium and health resort physicians from blame, but there is no denying the fact that a great number of patients return home, with the label 'arrested case', whose muscles are flabby from the prolonged rest cure on the reclining chair, whose respiratory systems have become indolent because they could not and should not breathe deeply while their lesions were active. Very often the excellent climatic conditions that prevail in sanatoriums and health resorts have tended to increase the patient's sensitiveness to atmospheric changes, and not to heighten his resistance to the invasion of pneumococci and the minor respiratory infections, all of which tend to re-awaken an arrested tuberculous lesion. Add to these the disturbing factors of the toxins (fatigue poisons) produced by overworked flabby muscles, and we need not wonder at the frequent relapses."

Dr. Knopf's chief argument following this was for the use of three measures for the preparation of these patients for taking up their regular walks of life. These measures are: massage, hydrotherapy and graded respiratory exercises. Because these patients leave the army hospitals or sanatoriums with flabby muscles, due to the enforced rest, it is wrong to have them start immediately upon the exercises incident to an occupation, without some previous preparation of the muscles for the new tasks. Massage, Dr. Knopf says, will accomplish this preparation. He demonstrated upon a patient four methods of massage, which he says are sufficient for the purpose. These are: friction, kneading, tapping and stroking. All movements should be in the direction of the venous flow.

Hydrotherapy should be begun gingerly, the patient being allowed to stand in a tub of water at blood temperature and sponged lightly with water at a temperature of eighty-five degrees. After a brisk drying, the patient should immediately jump back into bed and be well covered. The temperature of the water can be lowered on successive mornings until that of forty-five degrees is reached, which is low enough. Dr. Knopf further demonstrated a system of breathing exercises and emphasized the points that these should never be used in active cases and that the reason for their use in the arrested cases is not to effect further cure of the condition, but simply to carefully accustom the patient to the increased demands that his new environment will make upon his respiratory apparatus.

This address of Dr. Knopf's conformed quite closely with his article in the Journal of the American Medical Association, of February 22, 1919.

Discussion was opened by the representatives of the medical staffs of the various tuberculosis institutions of Denver. Dr. Samuel Swezy, of the National Jewish Hospital for Consumptives, spoke of the occupational training given in that institution which enabled their arrested cases to follow remunerative occupations without detriment. Their purpose is to make the graduate life of the discharged case conform as nearly as possible with the sanatorium life, physical and mental rest being urged.

Dr. Duboff of the Jewish Relief Society confined his discussion to what he called "the passive handling of these cases", that is, avoiding interference as much as possible, and cited three cases

of healed tuberculosis which had broken down under army conditions following the administration of typhoid vaccine. In each case extensive pulmonary pathology had resulted. He strongly advised against the introduction parenterally of any foreign proteid in a tuberculous patient.

Dr. Lincoln of Phipps Sanatorium approved of hydrotherapy, even in active cases, for the prevention of acute respiratory infections.

Major Bergtold of the Aurora U. S. Army general hospital said they had received sixteen hundred patients since October with active or suspected tuberculosis. They have now one thousand two hundred and fifty patients. He fears no flabby muscles. He said that their idea there was that the best preventive of a relapse was a first class, hard, permanent arrest, and that patients should be kept until that was assured. He gave as the four cardinal factors in securing this arrest, first, food; second, fresh air; third, rest; fourth, psychology (contentment), given in the order of their importance. He admitted that some of these men would get out by some means sooner than was desired.

Captain Heading, of the same army hospital, then described the so-called occupational therapy used partly for psychological effect and partly for occupational training. Academic work is taken up when the patient has become sufficiently strong to handle it. The great thing is to "keep them happy". Toughen them while in the hospital. Captain Heading further said that of seven thousand seven hundred and ten army men who have taken up vocational training in order to change their occupations thirty-six per cent were tuberculous cases, as against sixty-four per cent having other types of disability.

Dr. Sewall then thanked Dr. Knopf for again bringing to the attention of the profession something they all knew but had failed to utilize.

Discussion was closed by Dr. Knopf.

EL PASO COUNTY.

The regular monthly meeting of the **El Paso County Medical Society** was held April 9, 1919. Thirty-eight members and three visitors were present.

Dr. Clinton Harris and A. C. Holland were elected to membership.

The following program was given:

"Silence" in the Treatment of Pulmonary Tuberculosis.....Dr. S. W. Schaefer

Discussed by Drs. Gilbert and Giese.

The Evolution of Pulmonary Tuberculosis.....Dr. G. B. Webb

Discussed by Drs. L. G. Brown, Loomis, Boyd, McConnell, Gilbert, Giese and Schaefer.

C. E. RICHMOND,* M.D.,

Secretary.

COLORADO OPHTHALMOLOGICAL.

The regular meeting of the **Colorado Ophthalmological Society** was held in Denver on March 1, 1919; Dr. C. A. Ringle presiding.

H. R. Stilwill and Melville Black, Denver, presented a case of simple glaucoma in a man of fifty-three years. Sclerocorneal trephining had been done on the left eye, and the question of doing an iridectomy on the right eye was considered. Discussed by J. A. McCaw, Edward Jackson, E. R. Neeper, H. M. Thompson, and C. E. Walker.

H. R. Stilwill, Denver, presented a case of keratoconus in a man of thirty-four years. Dis-

cussed by Edward Jackson, Melville Black, and J. A. McCaw.

E. R. Neeper, Colorado Springs, presented a case of vernal conjunctivitis in a young man of eighteen years, the tarsal surface of the upper eyelids presenting typical cobblestone formations. Discussed by Edward Jackson.

C. O. Eigler, Denver, presented a girl aged four and a half years whose left eye was shrunken, possibly as the result of a uveal disturbance following pneumonia. Discussed by Melville Black, Edward Jackson, C. E. Walker, and J. A. McCaw.

W. C. Bane, Denver, presented a man of twenty-one years who had a diverging strabismus of the left eye which he was able to correct voluntarily. Discussed by C. E. Walker and E. R. Neeper.

E. E. McKeown, Denver, presented a man whose left eye had been penetrated by a small piece of steel which had lodged in the angle of the anterior chamber. Discussed by C. E. Walker and Edward Jackson.

H. M. Thompson, Pueblo, reported a case of mixed cell sarcoma of the ciliary body in a woman of forty-four years.

Edward Jackson and Melville Black, Denver, exhibited a calcareous lens which had been dislocated and had remained for some years in the vitreous, but had recently migrated into the anterior chamber, from which it had been extracted by Dr. Black.

WM. H. CRISP,
Secretary.

Book Reviews

The Medical Clinics of North America. Volume 2, No. 3. (The Philadelphia Number, November, 1918). Octavo of 275 pages with 46 illustrations. Philadelphia and London: W. B. Saunders Company. 1919. Published Bi-Monthly. Price per year: Paper, \$10; cloth, \$14.

In this issue of the Clinics of North America, the problems of influenza are granted almost one-half of the available space. Dr. Alfred Stengel compares in a most interesting manner the influenza epidemics of 1889 and 1918. He is persuaded that the present epidemic differs in no essential particular from those hitherto described. Dr. H. R. M. Lándis discusses influenza and some of its complications, with reports of instructive cases. Dr. J. B. Deaver's contribution deals with the surgical complications and sequelae of influenza which were so prominent a feature of the present epidemic. A valuable suggestion that he gives is that all pneumonia cases at the end of the second week be subjected to X-ray examination for early detection of any fluid that may be present. Dr. Charles W. Burr dwells upon the mental complications and sequelae of influenza. He observed that the outlook as to complete recovery from post-influenzal neurasthenia and psychasthenia is absolutely good. Dr. R. C. Rosenberger and Dr. E. A. Case present bacteriologic studies of influenza; and so on through the list of the problems.

The clinic of Dr. Thomas McCrae on Sciatica is enlightening. Dr. J. F. Schamberg's and Dr. Albert Strickler's contribution on Intraspinal Therapy of Syphilis is presented in a convincing manner. A point that is emphasized is, that paresis cannot be cured unless treatment is commenced at an extremely early stage.

A topic of interest is discussed in a clinic of Dr. Rehfuess in connection with a consideration of the medical treatment of biliary affections that

so often puzzle the general practitioners. Dr. J. P. C. Griffith presents a comprehensive description of "Dilation of the Colon in Children." Also there are reported most valuable observations by Dr. M. Ostheimer on the ever present and inexhaustible topic of feeding babies during their second year. The clinics of Dr. Leon Jonas on "Diabetes" and of Dr. David R. Bowen on the "X-Ray Diagnosis of Lung Diseases" deserve commendation.—J. L. M.

Clinical Microscopy and Chemistry: By F. A. McJunkin, M. A., M. D., Professor of Pathology in the Marquette University School of Medicine; formerly an assistant in the Pathological Laboratory of the Boston City Hospital. Octavo volume of 470 pages with illustrations. Philadelphia and London. W. B. Saunders Company, 1919. Cloth, \$3.50.

This is an originally conceived and attractive book with the latest laboratory methods and tests, intended for the student and for the general practitioner, as well as for the laboratory specialist. It aims to correlate the pathologic with the normal and comes very close to fulfilling this purpose. There occur entire omissions, however, of topics one would expect to find taken up in a book of this kind, such as the Diagnosis of Rabies, the Luetin and Tuberculin Tests, Complement Deviation Test for Gonorrhea and Tuberculosis, Volume Index, Reticulation of Red Cells, etc. Some other topics are slighted, for example: The value of hemoglobin estimations clinically and comparison of hemoglobin determinations with the red blood cell count. The arrangement of the book is not as methodical as one might expect, but when one considers the large amount of new material included, these deficiencies are readily overlooked. Among this attractive material we find the newer chemical blood tests, such as blood sugar, sodium chlorid, chemical fat, proteins, non-protein nitrogen, creatinin, uric acid, urea, carbonate content of plasma and hydrogen ion concentration of the blood, some of which are coming to the fore in the hospital and in the more elaborately equipped private laboratories. The technics for the solution of cancer cells by normal serum and for the Abderhalden test are described. Methods for the preparation of cholesterol, acetone-insoluble, gonococcus and echinococcus antigens are given in detail. The chapter on the bacteriologic examination of the blood is excellent. Considerable space is devoted to the examination of serous fluids and exudates comprising ascitic, pericardial, cystic and pleural fluids. The technic for the collection of sterile blood from laboratory animals is described and illustrated with original drawings. A number of pages are devoted to the mode of inoculation of animals for the identification of bacteria, also with original drawings.

Twenty-three pages are devoted to methods for the bacteriological examination of milk, water, sewage, meats, nasal and oral material, surgical tissue and curettings.

Under the methods of examination of the urine the "micro" and the "macro" methods for determination of total nitrogen, urea and ammonia nitrogen and uric acid will be found.

A unique feature is the last section of the book covering some 130 pages devoted in part to hospital histologic technic, imbedding, sectioning and staining and in part to autopsy technic.

The illustrations throughout are well selected, many are original and there are included four colored plates.

Clinical Microscopy and Chemistry is a book that is more than worth its price, and every stu-

dent hospital intern and scientific practitioner will do well to have it within immediate reach.

O. S. K.

Quarterly Medical Clinics. A series of Consecutive Clinical Demonstrations and Lectures. By Frank Smithies, M. D., F. A. C. P.; Associate Professor of Medicine, University of Illinois; Gastro-Enterologist to Augustana Hospital; Medical Consultant to U. S. Marine Hospital; Fellow of the American Gastro-Enterological Association, etc., at Augustana Hospital, Chicago. Volume I. Number 1. January, 1919. Published by Medicine and Surgery Publishing Company, Metropolitan Building, St. Louis. Annual Subscription, paper \$5.00, cloth \$8.00.

This number introduces a new publication to the medical profession which is published for teaching purposes, being a series of clinical demonstrations and lectures. A considerable experience in teaching has impressed the author that in instructing medical men, very little must be taken for granted; the simplest methods of clinical and laboratory examinations are often not clearly understood, even though they may be spoken of glibly and it is taken for granted that they are generally understood. Therefore Dr. Smithies pursues an original and thorough course in presenting his cases for deliberation and study. For instance, the contents classifies the chief complaint of each case, rather than the diagnosis, which seems a more useful and instructive plan. Then again after the diagnosis is reached there follows a thorough discussion of the subject with detailed notes on clinical and laboratory procedures. Therapy also is considered in a very complete manner. The x-ray, pathological, and clinical illustrations are most instructive.

No physician should deny himself the benefit of the Quarterly Medical Clinics, for they combine the valuable information of both text book and clinical course.

J. L. M.

Principles and Practice of Obstetrics. By Joseph B. DeLee, A. M., M. D., Professor of Obstetrics at the Northwestern University Medical School. Third edition, thoroughly revised. Large octavo of 1089 pages, with 949 illustrations, 187 of them in colors. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, \$8.50 net.

The latest edition of this work constitutes a splendid text book for the student and an excellent book of reference for the practitioner. The introduction calls attention to the thinking minds among the profession, the present day belief that parturition should not be looked upon solely as a physiological act. Much stress has been laid upon the relation of the endocrine glands to gestation, unanalysis in the toxemias of pregnancy, the importance of proper and safe anesthesia during labor and the correct and immediate repair of injuries to the birth canal.

It is gratifying to note the stress laid upon the importance of due consideration and study of moderate dystocia before resorting to the major operations, and the conservative methods in the treatment of eclampsia.

The arrangement of the text, together with a wealth of illustrations, make it a most comprehensive volume. As in previous editions the chapters upon diagnosis and treatment are discussed in a most admirable manner, making the work an excellent book for collateral reading.

F. H. C.

Military Surgery of the Zone of the Advance: Medical War Manual No. 7. By George de Tarnowsky, M.D., F.A.C.S. Published by Lea and Febiger, Philadelphia and New York. 1918. Price, \$1.50.

After a review of the Manual on Military Surgery of the Zone of the Advance it is found to cover the entire field of surgery pertaining to military treatment in a very brief and concise manner. There are several excellent chapters, namely, on Gas Bacillus Gangrene, Traumatic Shock, Hemorrhage, Wounds of the Soft Tissues, Tetanus, Wounds of the Thorax, Spinal Injuries, Wounds of the Peripheral Nerves, and all treatments of fractures, both simple and compound. In conjunction with the above, he goes into details in the chapters on burns, gas poisoning, and Roentgenology in War Surgery. Although brief, the manual covers the entire field and is worthy of consideration.

S. B. E.

Compendium of Histo-Pathological Technic. By Emma H. Adler, formerly Technician, Pathological Laboratory, Presbyterian Hospital, New York. Published by Paul B. Hoeber, New York. 1918.

This is a small book containing brief outlines for fixing and staining sections. The material seems to be selected from the best authorities on the subject. It is a good book for a beginner in laboratory work.

H. F. C.

NEW AND NON-OFFICIAL REMEDIES

During April the following articles were accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Non-Official Remedies:

Non-Proprietary Articles: Mercurialized Serum, Diphtheria Toxin-Antitoxin Mixture, Abbott Laboratories: Barbitol-Abbott Tablets, five grains. Lederle Antitoxin Laboratories: Anti-Anthrax Serum (Lederle), Antidysenteric Serum (Polyvalent) (Lederle), Tuberculin von Pirquet Test ("T. O.") (Lederle), Tuberculin Subcutaneous Test ("T. O.") (Lederle), Tuberculin "B. E." (Bacillus Emulsion) (Lederle), Tuberculin "B. F." (Bouillon Filtrate) (Lederle), Streptococcus Vaccine, Polyvalent (Lederle), Paratyphoid Vaccine (Lederle), Schick Test (Lederle), Mercurialized Serum (Lederle), Diphtheria Toxin-Antitoxin Mixture (Lederle).

The United States Public Health Service submits the following list of "our animal friends" and wonders what we propose doing about it:

Anopheles mosquitoes, which carry malaria.
Aedes mosquitoes, which carry yellow fever.
Lice (with military training), which carry trench fever.
Lice (with or without military training), which carry typhus fever.
Flies, which carry typhoid fever, dysentery and other diseases.
Fleas, which carry bubonic plague.
Tsetse flies, which carry African sleeping sickness.
Hookworm, which is very much attached to man.

"Procaine for Local Anesthesia in Surgery, the Specialties, and Operative Dentistry" is the title of a booklet which may be had free by any physician, hospital superintendent, surgeon or dentist sending his request to The Abbott Laboratories, 4757 Ravenswood Ave., Chicago, Ill.

Colorado Medicine

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Editorial Comment

POLITICS IN DENVER'S COUNTY HOSPITAL.

With characteristic vision and insight into the inward workings of the things for which he was responsible Mayor Speer re-organized the administration of the Denver City and County Hospital a little more than two years ago.

He appointed Mr. George A. Collins superintendent of the hospital and gave him a free hand in the administration of its affairs, with the results that have been so gratifying and satisfactory to everybody interested in or familiar with the work of the institution. The old medico-political stronghold of malodorous maladministration became, under Mr. Collins' supervision and Mayor Speer's protection, as nearly a model of efficiency and economy in the accomplishment of the purposes for which hospitals are created as was possible with the limited funds available and the antiquated plant provided.

Cleanliness and order, discipline and devotion to duty, kindness, consideration and courtesy characterized the new regime. The morale and morals of the whole establishment were revised and renovated, the political paupers and hangers-on who had no proper place in such an establishment were ejected and the nurses and employees were put upon an efficiency basis. They were no longer required to sacrifice their self-respect and honor to procure preferment, or to retain a place in the institution.

It is sincerely to be regretted that as a result of a recent municipal election this institution is to be deprived of the services

of Mr. Collins, and that the constructive work of Mayor Speer bids fair to be so soon undone. Indeed there is evidence all along the line that the spoils system and the narrowest kind of partisan political domination and personal favoritism are to rule the whole Department of Health and Charity under the new administration.

No part of the municipal government demands higher skill and efficiency in the public interests and nowhere else is the trained and experienced expert so necessary as in the health department. This was apparent in the late epidemic of influenza. Nowhere else is it quite as necessary to prevent the prostituting influence of party politics and personal favoritism.

It is sincerely to be hoped that Mayor Bailey, whose reputation for personal honor and integrity is established, and whose desire for a clean, efficient and creditable administration is acknowledged, may soon see that the constructive and progressive program of his illustrious predecessor is threatened with disintegration and destruction. This vital and essential department of his organization must be like Caesar's wife, above reproach. It is of paramount importance for our Department of Health and Charity to become as efficient as modern medical science, energetically and honestly administered, can make it. This should be the last department of the city government to be given over for the payment of private obligations and for personal and political exploitation. The health, happiness and welfare of the whole people are at stake. Our self-respect and municipal reputation are threatened. The ideals and lofty purposes of Robert W. Speer are apparently to be abandoned, which is a

manifestation of gross ingratitude, the unpardonable sin. Above all, as the politicians should appreciate, it is "bad politics".

"Party honesty is party expediency".—Grover Cleveland.

"He serves his party best who serves his country best".—Rutherford B. Hayes.

H. G. W.

THE TEST OF MEDICAL EDUCATION.

The war has tried many things and found many wanting. Commanding officers have been adjudged unfit for service in Europe, ship-builders have been demonstrated to have no knowledge of ship-building, and airplane designers are twitted with the delay occasioned by the undue emphasis laid on their theories.

Among medical volunteers there seems to be a general opinion that the standards of army medical service were elevated by those army surgeons and physicians who were drawn from civil life, and that this infusion of new blood was in large part responsible for the excellent record created during the war for this branch of the service.

Now enters Robert W. Lovett of Boston (Boston Medical and Surgical Journal, vol. 180, p. 418) with a hint that the exigencies of medical service in the army disclosed a number of striking defects in medical education. He argues that nearly all of the efforts directed for some years past at the standardization and improvement of medical education in this country have dealt rather with the process of education in the school than with analysis of the product of the education, the doctor.

Lovett's special department is orthopedics. The material for his observations consisted of two hundred and thirty-eight picked men from the medical corps of the army, representing forty-three states, the district of Columbia, and Porto Rico, and coming from seventy-six medical schools.

The defects attributed to these men, the majority of whom were above the average in qualifications, are as follows: superficial and slipshod methods of examination and a general lack of thoroughness; inability in most instances to think on sound fundamen-

tal lines and to base treatment on established pathology; lack of accurate or practical knowledge of anatomy, a very hazy knowledge of physiology, and often an incomplete understanding of pathology. There was an almost universal disposition to lay great and undue stress upon the history of the patient, and to make a snap diagnosis often without differential study.

The defects of which Lovett complains are probably due in the main to two causes. One is that until recently comparatively few medical students had received a thorough preliminary education. Although the requirements of medical colleges in this respect have considerably improved in the past few years, it must not be forgotten that no systematic action has been taken to standardize medical school teachers, whose faulty methods of thinking will be more or less reflected in their pupils. In some future day, when the majority of medical teachers are upon a full time and adequately salaried basis, there will probably arise special institutions or departments for training would-be instructors in the methods of medical education. The mere fact that a man is a good physician himself does not enable him to reproduce the same qualifications in others.

Lovett suggests that thoroughness and method in examination of patients should be dealt with by itself in a short course in any clinical department; that the student should be taught that memory is greatly strengthened by association, rather than expected to memorize isolated data; that anatomy and physiology should be taken up not only as abstract sciences but in their practical application to diseased conditions; and that in most medical schools there should be more actual central supervision on the part of the dean or of a committee working under him.

Perfection in medical or any other teaching will never be attained; but in our attempts at betterment of medical education the essential aim should be to equip medical graduates with such knowledge and habits of thought as will tend to the immediate benefit of humanity or to an advancement of medical science through teaching or research work.

W. H. C.

A JOURNAL OF MEDICAL SOCIOLOGY.

In every civilized country men and women are agitating for legislation which practically amounts to a restatement of the relations between the medical profession and the community. The average physician looks on at these medical-sociological proposals with a good deal of interest, but neither cooperates nor advises. Unless the medical profession wakes up it is likely to find itself harnessed with new duties and responsibilities in the planning of which it has had no part.

We are too busy with our patients as individuals to think of them in the group, as the community at large. "One outcome of the situation is certain. Either the doctors will meet the new demand with adequate intelligence and force, or changes will be brought about through swift, ill-advised, and perhaps prejudiced legislation". The quotation is taken from "Modern Medicine", a new monthly periodical which frankly announces itself as the clearing-house for progress in the relation between the doctor and the community. In an editorial under the heading "The Progress of Modern Medicine", the new magazine reminds us that we must think of medicine today as including everything that will make people fit for service; that to be well is the basis of happiness and prosperity; and that all have a right to be well and ought to be as well as the science of medicine can keep them.

In another editorial entitled "Health and National Efficiency", we are informed that every worker loses about nine days from sickness on the average every year; that the cost of medical care at present amounts to an average of about \$30.00 to \$35.00 per family every year; and that further enormous sums are spent for patent medicines, and for the upkeep of state institutions for the care of the insane, epileptic, feeble-minded and other defectives, and for free service by hospitals, dispensaries, and physicians. Fully thirty-five percent, it is estimated, of all the enormous amounts expended in charitable relief, public and private, is due to sickness, while an equal amount of old age dependency is due to the same cause.

The editorial writer suggests that "it is proper to raise the question and discuss it in season and out, whether the vast service of medical care and health protection required by a problem of these proportions is organized efficiently to promote health and prevent disease, and whether the existing medical knowledge and skill in the country are made to function fully for the high aims of national efficiency".

The new journal, which is published in Chicago by the Modern Hospital Publishing Company, is edited by Alexander Lambert, M. D., S. S. Goldwater, M. D., and John A. Lapp, LL. D. The first number, clearly and elegantly printed and appropriately illustrated, contains a number of excellent editorial comments besides those here referred to specifically, and such important contributions as one by Goldwater on the care of the sick in the United States in 1919, one by Rupert Blue on the obligations of physicians to the public health, one by W. C. Braisted on modern medicine as a gauge of civilization, one by C. D. Selby on modern industrial medicine, and one on carbon monoxid poisoning by A. J. Lanza, senior surgeon in the United States public health service, and a member of our own state medical society. We venture to prophesy that "Modern Medicine" will be warmly welcomed by the thinking section of the medical profession of the United States.

W. H. C.

A PLAN FOR FEDERAL HEALTH ADMINISTRATION.

In the May issue of Colorado Medicine editorial reference was made to the plan for a ministry of health now under consideration by the British parliament, and attention was called to the marked difference between the problems of government in England and America resulting from the system of states' rights in our own country.

Whether or not it be true, as is frequently objected, that our federal government is interfering more and more in administrative affairs affecting the individual states, it can hardly be questioned that such increase of centralization is much to be desired in public health matters at least, because of the

advantages to be derived from uniformity in regulation throughout the different states. It is probable that the main obstacles in the way of a federal ministry of health in this country are legal and constitutional, and that the time is otherwise ripe for such an organization.

Several of the great insurance companies of the United States, because in this matter their selfish interests and the public need are broadly identical, have from time to time put forward well considered schemes looking toward more systematic control of the health of the individual and of the community. One of the most mature discussions of the whole question of federal and state health supervision which have been placed before the public is that which has recently emanated from the headquarters of the Prudential Insurance Company of America. The author of this document, which is entitled "A Plan for a More Efficient Federal and State Health Administration", and which reaches a length of 87 pages, is Frederick L. Hoffman, LL. D., third vice president and statistician of the Prudential Insurance Company, who, incidentally, is also a director of the American Public Health Association, a member of the executive committee of the National Tuberculosis Association, and a member of the corresponding committee of the American Society for the Control of Cancer.

"Most of the so-called health legislation from the earliest times to the present day", says Mr. Hoffman, "has been concerned with the correction of ascertained sanitary or related imperfections, rather than with anticipatory action, having for its purpose the prevention of disease and premature death. . . . The new organization, however, should rest upon a totally different principle from that of the old one, and that is the clear recognition of the duty of the state to afford the best qualified medical and surgical service to all those who are in need thereof, even though they are unable to pay therefor the usual and not unreasonable charges common in every-day private practice."

The plan presented rests upon new principles of personal and public hygiene and covers all branches of public health under

the three following divisions: (a) General public health and quarantine, (b) Medical practice and physical welfare, (c) Statistics and information. It is proposed that the president of the United States should be prevailed upon to select a committee of experts to present a plan for federal health administration to replace the existing Public Health Service, which plan should, if feasible, include the systematic physical examination and medical supervision of children, the systematic collection, tabulation and analysis of data derived from general medical practice and institutional experience, and the establishment of a limited or restricted state medical service free from every taint of poor-relief and from the recognized disadvantages of poor-law administration. Among the important duties of this committee would be to investigate the legal hindrances to the establishment of a federal health administration, such as possible conflict of federal and state authorities, and to recommend the adoption of a constitutional amendment if deemed necessary.

The details of Mr. Hoffman's plan appear to be comprehensive and the product of wide experience as well as exceptional deliberation and foresight on the part of its author.

Following the impetus that has been given to the public health movement by the recent action at Cannes, France, of the International Red Cross, and by the accomplishments of the army sanitation corps, a well considered bill for the establishment of a federal health administration might receive the support of public opinion in sufficient measure to insure its enactment, although any such proposal is likely to meet a good deal of opposition ostensibly based upon the "sacred" principle of states' rights.

THE RED CROSS AND PUBLIC HEALTH.

In this day of leagues, is there to be a league of public health organizations? In so far as a league means coordination of effort and unity of purpose, it may be said that before long such a thing probably will have been accomplished.

The Red Cross, itself in many respects an international league, realizes that in its

mission, as in medicine, prevention is at least as important as cure; and that its work of relieving suffering humanity is therefore closely bound up with the public health movement. The Committee of Red Cross societies called to meet at Cannes, France, early in April, for the purpose of formulating and proposing to the Red Cross societies of the world an extended program of Red Cross activities, had as the object of its very first conference the preparation of a program for the organization of an International Council and Bureau of Hygiene and Public Health, which will consider the work to be undertaken in connection with the prevention of epidemic diseases, tuberculosis and venereal disease, with child welfare, etc.

The committee is composed of some forty-nine prominent specialists in the various broad phases of this work, from France, Italy, England, Japan and America. Nineteen of them are from America and are drawn from our profession and from among professors of institutions of learning whose work is pertinent to public health matters. While the exact plans are not as yet matured, an idea of their scope may be had from what has already occurred in America.

It seems there are in this country at least twenty-eight associations devoting their attention exclusively to public health, and not less than twenty-nine others whose activities include public health work. As Dr. George Vincent, president of the Rockefeller Foundation, says, these various agencies in pursuing varied purposes, collecting their own funds and devoting much energy to putting their needs before the public in appeals for support, inevitably fail to advance the common object as effectively as they should. At his instance therefore a preliminary meeting was held at which were present the following organizations: American Public Health Association, American Red Cross, American Social Hygiene Association, National Tuberculosis Association, National Housing Association, National Organization for Public Health Nursing, and American Society for the Control of Cancer.

Because of the specialization of purpose of most of these societies, it is their conviction that a plan to displace the separate

agencies by a single health organization would be at the present time inexpedient, but it was agreed that a federation of national organizations would be desirable. The chairman of the meeting was therefore authorized to invite delegates from a number of organizations, including those there present, to a more formal meeting at which some form of council representing them all would be established. When formed, this national league will result in the desired coordination of effort and unity of authority, and the Red Cross will be enabled to distribute its aid, financial and otherwise, to the best advantage and with the least confusion.

Dr. Livingston Farrand has unqualifiedly announced the principle that whatever the Red Cross program may be it will not be one of absorption and displacement of established health agencies, but will rather have it as its chief object to work with and through these organizations, giving them aid in the establishment of teamwork, and perhaps also material financial assistance.

In this movement we are apparently to see another federation organized to do as a unit what has been impossible of accomplishment by lesser organizations working independently and, often, at cross purposes. The result should be an infusion of new life and enthusiasm into the public health work of the future.

Original Articles

FRACTURES OF THE TIBIA.*

WILLIAM SENGER, M.D., PUEBLO.

One of the commonest fractures among our industrial population is that of the tibia. Because of its frequency it is usually regarded by the laity and physician as trivial. Admitting the truth of this statement in the majority of cases, we all have longed at times to wish such a fracture on our worst enemy.

During the past three years we have treated ninety-two cases of tibial fracture at the Minnequa Hospital. Of these, twenty-

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

five were compound and forty-four comminuted; eight involved the knee joint and twenty-eight, the ankle. Amputation because of thrombosis was necessary in one case.

As soon as possible after arrival at the hospital, the fractured leg is x-rayed. The plate is kept as a permanent record. Such a procedure suggests needless expense. After a few sad experiences of inaccurate diagnoses, however, we feel that such an examination is almost as essential as the subsequent reduction of the fracture. Of course, a double negative is taken to show views of the fractured parts at right angles.

When the x-ray was first introduced, roentgenograms of old fractures were taken. None seemed to be properly aligned. Even now many of us do not fully appreciate that functional and anatomical results may differ widely; that the x-ray may show a most awkward looking result in a patient with apparently perfect function. Unfortunately, there are still many needless open operations because this fact is not universally recognized. Other things being equal, if the fractured ends are in contact for more than one-half of their surfaces, and the bones in good alignment, the functional result will be normal.

Simple Fractures.—The preliminary treatment of simple fractures consists of placing the limb in a blanket splint resting on a pillow and further protected by sand bags. Ice caps are applied and nothing further done until the swelling has nearly disappeared. The fracture is then reduced under the fluoroscope. When thus treated, we have never had a simple tibial fracture which has not given good results.

Without question, the Blake method of splinting is of great service, but I believe as good results are obtained in simple fractures by using the older treatment. We still resort to immobilization with plaster of paris, extending from the middle of the thigh to the toes. When this is properly applied the patient soon gets about on crutches and we have little fear of re-fracture or displaced fragments.

Much earlier than is usually advised, we begin massage and passive motion. Both

must be applied by one thoroughly conversant with the individual conditions.

The fluoroscope is frequently used during convalescence and until the case is discharged cured.

Comminuted Fractures.—These cases can usually be treated as simple fractures. But when such a fracture involves the ankle joint or, more rarely, the knee, it may be impossible to reduce and fix properly, except by open operation.

Likewise it is the rule that an open operation is almost imperative in a comminuted spiral fracture with the fibula splintered at a higher level. Contrary to the present fashion, in such a case, we do not use the intramedullary autogenous graft. We feel that destruction of the bone marrow is a mistake.

In open operations we have completely abandoned the use of all metallic substances for fixation. The autogenous graft answers every purpose and avoids the possibility of future irritation. Frequently such grafts are unnecessary, the simple substitute of binding the splintered parts together with kangaroo tendon sufficing. When so used the ligatures must pass through drill holes to keep the parts from slipping. At times, also, open operation needs only to be limited to a tenotomy of the tendon of Achilles, a simple procedure which often effectually releases the obstreperous backward muscular pull. The Lane technic of asepsis is always carried out, otherwise one is certain to have infection sooner or later. Whenever open bone operation is contemplated, bear in mind the possibility of fat embolism. Although it is "merely a bone", rough handling may produce this condition; certainly the soft parts will suffer.

Long incisions, complete relaxation of opposing muscular pull, gentleness, asepsis and, finally, proper fixation will give the sought for results.

Compound Fractures.—In our treatment of compound fractures we follow the Carrel-Dakin method. It has proven most satisfactory. We feel keenly that the soft parts in a compound fracture should never be sutured at the time of the first aid dressing. We believe it far better to pour one-half strength tincture of iodine into the

wound and well about the surrounding parts. After this has dried, a loose sterile dressing should be applied. The limb should be placed in a blanket splint, immobilized, and, if possible, the patient sent to a hospital for future treatment. If the physician's curiosity has been sufficiently under control to keep his fingers out of the wound and the sterile dressings have been properly applied, at least ninety percent of these fractures show no sepsis in civil practice.

As soon as the patient comes under our care at the hospital, the limb is x-rayed, the dressings removed and, under the strictest aseptic precautions, the external wound dressed. If the external communication be small, the limb for several inches about the wound is dry shaved and sterilized with one-tenth of one percent of iodine in benzine, followed by one-half strength tincture of iodine. No attempt at final reduction is made. Sterile dressings are applied and the limb immobilized with blanket splints and sand bags. The limb is not disturbed for several days if everything goes well, our guides being the pulse, the temperature and the leukocyte differential count. The x-ray shows us the condition of the bone. Its final treatment is left until the external puncture is healed.

If, on the other hand, the external communication be large, our procedure is different. After the usual preliminary x-ray, the patient is anesthetized and the skin from knee to ankle is sterilized as already described. Every fold and crevice in the skin is thoroughly treated. The wound itself is poured full of the solutions and each is allowed to soak for five minutes. Again our treatment is varied, depending on whether infection is in the preinflammatory stage, the active inflammatory stage or the suppurative stage. If in the preinflammatory stage, the wound is widely opened, thoroughly inspected, and all devitalized tissue removed by sharp dissection. Such dissection presupposes a good knowledge of anatomy. It should be done in such a way as not to carry infected material on the knife or forceps into uninfected portions of the wound. Any foreign material, including blood clots, must be removed. No finger contact is allowable. Hemorrhage must be

fully controlled. Ligatures should always be fine, and of absorbable material. No counter drainage is permissible. If we feel certain that the field is thus rendered clean, the wound is closed by primary suture; otherwise Carrel-Dakin tubes are then inserted, it being borne in mind that the tubes must be so arranged that the solution reaches all parts of the wound. It is vital for success that the solution should bathe all crevices in the fractured bone and all dead spaces. It is scarcely necessary to draw your attention to the many failures in using this solution. By improperly introducing the tubes, by using old or carelessly prepared solutions, by neglecting to irrigate the wound at least every two hours, by abusing the oft-repeated warning of reinfection through careless dressing—all of these may account for most failures.

Such a wound should be dressed every day—properly, pains-takingly, never neglecting a single detail. Every day a smear from the wound for bacteriological examination must be made. These smears must be taken from various parts of the wound. Often a small pocket may not be germ free when all other parts are clean. When the temperature is normal and the microscope shows germ-negative results for three successive days, the fractures may be reduced, the wound sutured and the part placed in a permanent splint.

While awaiting this time, the fracture must be completely immobilized. Here the Blake splints and suspension apparatus have their greatest value, in preventing ankylosis in a long continued case.

During the stage of active inflammation, beginning usually about twenty-four hours after injury, in cases untreated or improperly treated, we must be far less radical. With extreme gentleness lay open the foci of inflammation and the intermuscular spaces in which infection is being produced. Bear in mind that cutting instruments are dangerous as they may carry the infected material far and wide. Carrel-Dakin tubes are inserted in all pockets. During and after such operation there should be absolute immobilization of the limb. After a few days, conditions improve, most of the germs are killed and immunity of tissues to

the remaining microbes has become established. Soon the real operative treatment may be instituted. This should be carried out with the same details as though not infected.

In frank suppurative types, one must wait until the acute stages are past. Instillation tubes should be inserted into all pockets and the Carrel-Dakin solution used. A time finally comes when the number of germs in the smears remains practically stationary, and the temperature shows little or no fluctuations. That is the time for active surgical cleansing of the parts. It should be borne in mind, however, that the deeper tissues are still full of germs and re-infection is possible. Careful handling of the parts is the best preventive. The wound should be widely opened. All periosteum should be carefully preserved. If bone grafting be contemplated, the tibia is prepared for the reception of the graft. Once more the Carrel-Dakin treatment is instituted. After the lapse of a few days, the wound secretions having been shown aseptic, the operation is completed, the wound closed and the parts immobilized.

The results obtained can best be judged by roentgenograms.

Kindly note how few open operations we have done—five, when fractures were not compound. In four compound fractures we found it of advantage to use the autogenous graft after the preliminary Carrel-Dakin treatment.

In other words, this paper is a plea to avoid rushing into open operations unless the indications are decisive. And such decision can scarcely be reached without the application of our best judgment with the aid of the x-ray plate, the fluoroscope and the laboratory.

DISCUSSION.

John Andrew, Longmont: Since the introduction of the x-ray, the diagnosis of fractures has been greatly simplified, and the necessary manipulation to ascertain the type of fracture can be dispensed with, and I want to endorse what Dr. Senger has said, that he does ray each and every case that he treats.

As to the use of the fluoroscope in handling these cases, I do not believe that it is rational, in that I believe it is considered to be rather dangerous to both operator and surgeon. All of us in our time have treated these cases, and we

have reduced them to the point where we thought we had almost perfect anatomical alignment. Subsequent pictures proved such not to be the case, yet functional recovery occurred in the majority of cases.

As to the preference in treatment of these cases when brought to us, we all agree that if we have a marked degree of deformity and swelling, temporary treatment is advocated and indicated. The various splints, the plaster splint, the pillow splint, the blanket splint, or the old fashioned fracture box, all have their merits, and it is a matter of choice which to use. Many of these cases come to us with little deformity and little swelling, and they can be placed in a permanent dressing at once.

As to the permanent dressing, especially in those cases that are of a severe nature, it is best for us not to be too hasty, and then the permanent plaster splint as recommended is preferable. With this properly applied and with proper traction we usually get a good functional recovery. There are exceptions, particularly in badly comminuted types of fracture or the spiral fractures high up. There we will have some difficulty, yet I believe that open treatment is the last consideration.

The use of the Blake method I am not very familiar with, but I believe that its advocates say that it gives early passive motion in preventing ankylosis; yet we must have absolute discipline for our patients to become accustomed to the use of it.

In the treatment of the severe comminuted and spiral fractures, especially the comminuted type near the extremities of the bone, I believe that the application of the plaster splint with exaggerated traction is indicated. I have had come to my attention during the last year two cases of comminuted fracture of the head of the tibia, and after applying the plaster splint with extreme traction I got almost a normal functional recovery, in one seventy-five percent, and in the other almost perfect. Near joints the open treatment is not advocated. If the open method is adopted, we all agree that almost absolutely perfect surgical technic is necessary.

Again, I would like to endorse the position taken by Dr. Senger when he discourages the introduction of any substance that may become foreign in fixing these fractures. Ligatures, sutures, and autogenous grafts are preferable.

Since this war, in the treatment of compound fractures which are so desperate, the introduction of the Carrel-Dakin method has lessened materially the mortality and number of nonunions. We have already an open fracture to deal with in these compound cases, and we take it for granted infection is already present. The Carrel-Dakin method has proven to be satisfactory in overcoming this infection. With the use of the leukocyte count and smears we are able to keep in touch with the conditions of the wound, therefore we have a signal of procedure. A man engaged in private practice does not have these advantages. He does not have a hospital where he can have the leukocyte count made daily, nor does he always have the Carrel-Dakin apparatus present.

I wish to say further in the matter of introducing drainage, that if the Carrel-Dakin method is adopted it should be used alone. No other drainage should be introduced as infection will be carried to the parts by its repeated introduction. We feel that the procedures advocated by Dr. Senger are all right, and that the open treatment should be the last resort.

Dr. Senger (closing): Dr. Andrew spoke about

the fracture box. I do not like it because I am afraid of it. Beware of a pressure sore on the heel from the use of the fracture box. It is difficult to immobilize a limb in it. I like the pillow with blanket splint to overcome both these objections. Plaster of paris is the best permanent splint. If put on after the swelling has gone down, we can let the patient up. If he should fall down stairs there will be no particular damage to the limb.

So far as the open operation is concerned, there is not a case of this kind that I do not approach with great hesitation, and the more work I do along this line the more timid I become. I am afraid of infection. You may have one hundred clean abdominal cases without infection. The same technic would give you many infections in fracture cases. The Lane technic is the only technic to use. If you do not use it, you will get into trouble, and if you do use it, you may.

The only place for a case of compound fracture of the tibia is a hospital. Any man who has had many compound fractures to handle will agree with me that that is essential. If it is essential in the treatment of abdominal cases to have the patients in a hospital, it is twice as essential to have cases of compound fracture in a hospital. The dangers are greater, and the danger of the final outcome of leaving the patient crippled is much greater than it is in the case of a simple appendix or a simple gallbladder or hernia operation.

SPASTIC IRRITABILITY OF THE INTESTINAL TRACT.*

JULIUS L. MORTIMER, M.D., DENVER.

The hyperkinetic symptom complex of the intestinal tract embraces abnormally increased physiologic motility in general as well as disturbances of the synergetic movements, since the coordinated function of the circular and longitudinal muscle fibers resulting in peristalsis, tonus, segmentation, etc., may be altered.

Whereas in normal individuals there are marked physiologic differences of gastric and intestinal functions, namely, the power and rhythm of the contraction phenomenon, it is more the case in diseased states. Hypermotor manifestation in the form of spastic hypermotility, or the occurrence of fixed waves and tonic contractions, may be due to various intrinsic and extrinsic causes.

Spastic disturbance of the intestinal tract will therefore be studied and discussed, not as a separate or independent malady, but as a manifestation, a symptom of gastrointestinal and other local or general diseases. While this subject is of great theoretical

interest, it is of even more interest from a practical standpoint.

A consequence of hypermotor disturbances which hasten the ingesta through the intestinal tract is incompleteness of digestion and absorption.

The efficient coordination and balance of the various functions of the digestive organs are dependent upon the proper innervation from two antagonistic systems of nerves, the autonomic and the sympathetic. Therefore a normal state of digestion requires constant innervation tonus, which, although fluctuating within certain limits, results in an even and regular functional state. Furthermore, the viscera have imbedded in their walls ganglion cells, acting as autonomic centers for the smooth muscles and glands, and capable of controlling the intestinal function independently and adequately, if need be. In addition to these ganglion cells and the above mentioned sympathetic fibers from the dorsal plexus and the autonomic system, originating from the medulla oblongata, midbrain and sacral plexus, the viscera are also under the influence of the central nervous system and the psyche.

In regulating the functions of the intestinal tract during rest or work, it is observed that the action of the sympathetic fibers is relaxing or paralyzing, whereas that of the vagus is stimulating or irritating. This applies particularly as regards secretion and motility, that is, increasing or decreasing the tonus of the muscles, their contractions and relaxations, opening and closing of the sphincters, etc. Aside from individual fluctuations that may exist under normal conditions, there can result far-reaching changes of intestinal functions due to an overbalancing of tonus in one or the other antagonistic systems.

For the increased motility of the intestinal tract, the ramifications of the vagus have proven to be of great importance, it acting as an autonomic nerve. We have known since Riegel's investigations what significance the vagus has as a secretory nerve. Further studies by Eppinger and Hess have established definitely the manifestations of an increased vagus tonus,

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"vagotonia". The excessive irritable state in vagotonia is revealed by increased secretion, tonus and peristalsis, spastic contraction of the small and large intestines, colica mucosa, etc.

We shall now not only consider the functional disturbances resulting from an increased tonus of the autonomic system, but also all hyperkinetic manifestations, whose causes are to be found outside as well as within the intestinal tract.

Intestinal motility seems (a) to propel, (b) to thoroughly mix the intestinal contents with the various secretions, and (c) to produce a complete resorption. The movements of the intestines differ in intensity, rate and rhythm depending upon the physiological functions of the various segments.

Cannon has shown that the small intestine is much more actively engaged in the segregation or segmentation of food than in its mere propulsion. Actually, however, propulsion is rapid. One type of motility is given over to the segmentation of food in short blocks, thus giving time for thorough digestion as well as absorption. A second movement is peristaltic, and the intestines contract at one point, then relax and continue this in successive segments, pushing the contents forward. A third is the pendulum movement by which the coil is moved to and fro along the mesentery with no particular contraction. The contents are mixed up by these movements but not propelled forward. Another movement that Kemp mentions is a rotary one by which a coil contracts in a circular direction rapidly for fifteen to twenty centimeters in a violent manner. It is observed only in the small intestines, after indiscretions in diet or with stenosis. Holzkecht states that in the duodenum, the chyme is propelled in finger-like masses, which appear flocculent in the jejunum and have a coagulated appearance in the ileum.

The movements of the colon are similar to those of the duodenum but only in the proximal portion where the contents are liquid. The peristaltic, mixing and kneading movements last until the absorption of liquid results in a thickening of the chyme.

Peristalsis takes the form of small move-

ments with separation and segmentation. Further on, tonic contractions of larger segments are observed (mass movements) in which the contents of one section of the colon are moved onward into an empty distal portion by a sudden push. Furthermore, Cannon and Holzkecht describe antiperistaltic waves which delay the advance of the contents thereby resulting in a greater degree of absorption.

The coordinated action of circular and longitudinal muscle fibers is produced by a series of stimuli and reflexes which are dependent not only upon the mechanical and chemical constituents of the ingesta, but also upon extrinsic factors as well as vasomotor and nervous influences.

Auerbach's and Meissner's plexuses are probably the automatic centers for peristalsis, but there are central agencies. For example, fright or excitement may cause diarrhea. Ehrman claims that the longitudinal fibers are stimulated by the splanchnic, whereas the circular fibers are stimulated by the vagus.

The chyme acts as the normal stimulus to peristalsis through the nerves. Toxic material that has been ingested or developed in the intestinal canal, indigestible food, organic acids, too hot or too cold drinks, may overstimulate the peristaltic action. Finally, intestinal motility is influenced by substances circulating in the blood (hormones).

The occurrence of a spastic state is due to exaggerated physiological tonic contractions either of circumscribed areas or entire intestinal segments. Then again, cramplike constrictions of the peristaltic waves will result in spastic peristalsis. The intensity and duration of this condition varies according to the disposition of the patient and the nature of the prevailing cause, so that either a slight degree of spastic contraction in the active or fixed waves, or a prolonged spastic occlusion may be observed.

The causes of spasmodic intestinal contractions are unusually variable, that is, the same cause even in the same individual will produce at one time cramplike peristalsis and at another tetanic contractions.

Prevailing causes as already mentioned are to be sought in the abnormal irritation

from the intestinal contents, and in mechanical or chemical reflexes, derived from the ingesta, that is, the formation of large amounts of liquid or gaseous decomposition products. An increase of intestinal contents alone will often produce abnormally increased motility owing to a hastened evacuation of the stomach, resulting in a sudden overfilling of the intestines with insufficiently digested food. This may be a consequence of hurried eating or poor mastication. Large undigested food substances as well as foreign bodies will generally pass rapidly through the small intestines without any manifestations. Disturbances will occur usually in the large intestine, where local spasms will be intensified by the occlusion of the foreign body.

Inflammations and new growths of the intestinal wall will result in an increased irritability of the automatic centres of motility (Auerbach's plexus, A. Schmidt). We also observe spastic manifestations and increased peristalsis accompanying acute and chronic enteritis of an infectious or toxic nature.

Neoplasms will produce spasms less often in the small than in the large intestines. However, intestinal stenosis of whatever nature causes disturbances of motility. Chronic stenosis can often be detected on inspection or palpation, which will reveal an inflated, markedly distended intestinal segment, with alternating contraction and relaxation accompanied by pain, meteorism, rumbling and obstipation. Over the prestenotic area the forcible contractions will disappear as soon as the obstruction becomes complete, due to the resulting paralysis of the intestinal musculature.

Aside from the mechanical causes of enterospasm, such as foreign bodies, neoplasms, stenosis and adhesions, in rare instances abnormal displacements or deformities, especially of the large intestines, that is, coloptosis, in a person of asthenic habitus will be the basis of subsequent enterospasm. It is not quite settled whether the increased irritability of the ptosed intestines is caused by mechanical obstruction at the splenic flexure (Payr) or by disturbances of innervation.

Intestinal spasm is a significant factor in

causing invagination according to Nothnagel, who claims that the spastic contracted ring over a circumscribed area forms a fixed point, from which the infolding occurs.

Hematogenic influences on intestinal motility and secretion are found in many infectious diseases (Hertz). The toxins of bacteria have here a variable action; in pneumonia, tonsillitis, diphtheria, etc., intestinal paralysis may occur (toxic meteorismus, Nothnagel), whereas in other diseases hypermotor manifestations with increased peristalsis are observed. Similar observations have been found to accompany disturbances of internal secretions as in morbus Basedowii and Addison's disease. Here mention may be made of anaphylactic intestinal disturbances which produce abnormal irritation of the intestinal mucosa, resulting in congestion, exudation and, thereby, diarrhea and colicky pains.

A frequent occurrence of intestinal spasm as a result of toxic action is found in lead poisoning and in nicotine poisoning. It is as yet unknown whether the pain in lead colic is caused by muscular spasms or by irritation of the sensory nerves.

That vasomotor influences and abnormal circulatory conditions in the intestinal blood vessels play an important rôle in the functional disturbances of these organs is well known, having often been described in arteriosclerosis of the abdominal viscera.

Nervous enterospasm as an independent functional disturbance or disease rarely occurs primarily, more often, however, as a manifestation of hysteria, neurasthenia, or hypochondria. Here the innervation disturbances of the intestinal nerves contribute the cause, of which the irritability of the vagus is principally to be considered. The experimental investigations of Böhm, Lehman and Klee revealed that irritation of the vagus resulted in the appearance of unusual, powerful tonic contractions, and an increase of force and frequency of the peristaltic wave of the small intestine and proximal colon. However, it is known that the distal colon and the rectum possess a marked tendency to hypertony and spastic contractions, though they are only in a small measure under the influence of the vagus. Therefore Böhm concludes that other influences in the

cranial and sacral autonomic systems play an important rôle. Only through a central irritation can the spasm be accounted for in tabes, shell shock (Fenwick) and some cerebral diseases.

More frequently enterospasms are observed to occur through reflexes, from other diseased organs, especially if the distal irritation is accompanied by pain, as in pelvic or abdominal diseases (Singer). Such would be appendicitis (Schultz), gallstones, renal colic, gastric ulcer (Ayres), anal fissure, endometritis, vulvo-vaginitis, oophoritis, chronic posterior urethritis, cystitis, etc.

Aside from these temporary enterospasms, there occur independent nervous forms, prolonged tetanic contractions of the small as well as the large intestines, which through complete closure of the intestinal lumen develop into ileus. Such observations have repeatedly been made at operations, (Hawkins, Eidenhain, Pankow, Nordmann, Mathews and Bützner) in which no other intestinal disease was found. A spastic ileus may be caused by foreign bodies within the lumen of the bowel (gallstones, neoplasms, ulcerations, worms, etc.) which of themselves do not cause complete occlusion.

As to symptoms and diagnosis: The cramplike enterospasm with narrowing of the lumen in which the portion involved is transformed into a painful strand, is accompanied by drawing or tearing pains, borborygmi and painful desire to defecate, and externally there is frequently recognized meteorism of the distended intestinal coil. The colicky pain, though usually accompanying enterospasm, may, however, appear alone, due to an irritation of the sensory nerves or hyperesthesia of the mucous membrane, therefore it is not correct to measure the intensity and extent of the spasm by the severity of the pain. The existence of an enterospasm can be suspected if the phenomenon is prolonged, associated with a spontaneous pain, tenderness over the contracted area, signs of meteorism, gas and fecal retention. Occasionally cases with marked spastic manifestations are seen in which peristalsis is observed to be increased, resulting not only in frequent evacuations, but also diarrhea (spastic diarrhea); this is the usual occurrence in chronic colitis, where as

a consequence of abnormal irritation of the intestinal wall there are found not only tonic contractions but also spastic peristalsis.

The pathology of spastic intestinal conditions has made considerable advance with the aid of roentgen examinations and operative autopsies as controls. Colospasms are characterized radiologically by narrowing of the haustra, marked haustral segmentation and varying enlarged intermissions of the contrast filling.

Colospasm, spastic obstipation, spastic diarrhea; more frequently spasms are observed radiologically and by palpation in the colon, where there seem to exist central points of predilection. According to Böhm and Stierlin the hepatic and splenic flexures are the sites where spasms are apt to occur. According to Holzknecht and Singer, it is at the junction of the sigmoid flexure and rectum, whereas Albu found it more often in the cecum and sigmoid flexure.

The spasmodic tendency of the large intestines assumes an important rôle, practically, as the basis of the so-called spastic obstipation. After the investigations of Mathieu and Roux, and Hawkins, spastic constipation was described by Fleiner as an independent clinical entity, in contrast to the atonic form. The spastic form was soon observed in the anemic and neuropathic individuals (Albu). Among the clinical symptoms there were now described spontaneous cramplike pain (Rosenheim), the finding of contracted and tender intestinal coils, and painful evacuations (Westfalen). A sphincter cramp (Singer) produces small balls and pencil or ribbon-shaped fecal material. Not infrequently both spastic and atonic signs of the large intestines are found in the same individual, either alternating or associated (Albu). An example of this form is found in the ascending type of obstipation with prolonged fecal stasis in the atonic cecum or ascending colon, with an accompanying hypertony of adjacent segments, that is, spasms of the hepatic flexure (Böhm). The cecum having the thinnest and less resistant wall of the large intestines, it is often found extremely distended and enlarged in the early stages of a colon stenosis (Bayer).

Tenesmus is frequently present and the effort to defecate, although it involves much

straining, is often unsuccessful. Even when a stool is passed, there may still be a sensation as if something were left behind, although the rectum is nearly empty.

It is possible that in some cases of constipation, secondary to painful diseases of the pelvic and abdominal viscera, the vagi are involved instead of the sympathetic nerves, so that intestinal spasm, and not inhibition, occurs (Singer).

Neurotic, constipated individuals are liable to attacks of abdominal pain, accompanied by an increase in the constipation and by the passage of membranes, the condition being known as muco-membranous colitis, first described by Richard Powell. The attacks of pain may closely simulate appendicitis or biliary colic, but the passage of the membranes clears up the diagnosis.

The tendency of the intestines to become spastic increases towards the distal part (Mathieu). Holzkecht and Singer designate the pars rectoromana as the main site of spasms. Proctospasm is accompanied by irregular evacuation of the bowels and obstipation (proctogenic obstipation, Strauss) resulting from a cramplike contraction of the anal sphincters; this may develop secondarily in rectal disease—inflammations, neoplasms, fissures, hemorrhoids, foreign bodies; or in disturbances of adjacent organs—cystitis, pericystitis, diverticulum of the bladder, diseases of the prostate or the female genitalia, etc.

Proctospasm may be caused by irritation through the sacral autonomic system, the pelvis nerve, as in tabetic crises, hysteria and neurasthenia.

A diagnosis may be reached by a digital examination per rectum or by the x-ray, after a bismuth or barium enema has been given. Of less importance is rectoscopic examination or the filling and inflating of the rectum with water and air.

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DISCUSSION.

Leonard Freeman, Denver: I did not expect to discuss this paper, but the subject of spastic ileus, or spastic obstruction, is a matter of so much importance that it should receive attention. The literature on the subject is not extensive. We can recognize three forms of intestinal obstruction, the mechanical, the spastic, and the paralytic. I

think this is a very simple classification and one that covers the ground sufficiently.

Perhaps the most startling and characteristic form of spasmodic obstruction is that which takes place, not in the large intestine, as was considered in this paper, but in the small intestine, and usually in the lower portion of the ileum. A section of bowel not more than three to six inches in length will contract to the limit, so that it is hard, white and bloodless, and not bigger than a lead pencil or a fountain pen. So firm is this contraction that you can pick it up by one end, during a surgical operation, and it will stand out straight without bending, just as you hold a pencil in your fingers. This obstruction may take place in many portions of the intestinal canal, but it is usually found in one particular place. The contraction is so divided from the rest of the bowel that the adjacent intestine forms a perpendicular wall.

The causes of this obstruction are extremely obscure. The only thing we can say is that it is due to reflex irritation, arising generally in the intestinal canal itself, but possibly in other portions of the abdominal cavity, for instance a twisted ovarian pedicle, a strangulated hernia, or a twisted spermatic cord. It may follow any kind of surgical operation, which is a very important thing to know. I have seen it follow a lumbar nephrectomy.

The symptoms are those of intermittent obstruction. They vary all the way from an acute, extremely serious obstruction, with vomiting, collapse, bad pulse and subnormal temperature, possibly leading to death, to the mildest sort of colicky pain accompanied by constipation, which may extend over a course of years. It is an important matter to recognize this spasmodic intestinal obstruction because it may explain some cases on which we operate and do not find any mechanical obstruction.

What sort of treatment can be given? In the first place, the diagnosis has got to be made always in favor of mechanical obstruction. It is extremely difficult to tell a spastic obstruction from a mechanical obstruction, and the diagnosis must lean towards the mechanical side, because if it does not, we may make a mistake and fail to operate upon a case that requires operation. In addition to that, operation is not contraindicated by any means even in spastic ileus. If we can make the diagnosis, we may content ourselves in some instances with giving antispasmodics, as opium or atropin or chloral, or something of that kind. But we cannot make the diagnosis in many instances, so that often we have to operate.

Strange to say, during the operation the spasm may not disappear. As I have seen, on two or three occasions, the spasm may persist in spite of the anesthetic. Another thing is that following the operation, after the abdomen is closed, without doing anything else, the spasm will often cease; hence we may be justified in certain instances in closing the abdomen, trusting that the spasm will disappear. Opium and antispasmodics are of course given afterwards. Any one who operates on these cases is always tempted to short-circuit the contracted portion of bowel. This may be justifiable, in spite of the fact that we have no precedent for doing it, and in spite of the fact that we do not know the individual may not have subsequent spasmodic contraction in some other spot. This is especially true owing to the fact that individuals have died in recurrent attacks.

J. E. Matlack, Longmont: Reference was made in the paper to the x-ray appearance of spastic contraction of the gastrointestinal tract. A spasm

of the gastrointestinal tract is both a great help and a great hindrance to the diagnosis by means of the x-ray. It is a help in that a great many of the roentgen signs of disease of the stomach, for instance, are due to spasm. A deformity of the duodenum in duodenal ulcer is the result of a spasm of that portion of the gut, and in that way the diagnosis can be definitely made. The crater is too small to be visualized and we are therefore left to make our diagnosis of spastic deformity by reason of the irritation of the ulcer. Very often in ulcer of the stomach itself the same condition applies. We have merely a spastic incisura opposite the ulcer, and the ulcer may not be visualized at all. At other times, the roentgen examination of the stomach may show that it is very definitely deformed, and if operation is undertaken on the diagnosis that the condition is a filling defect, there will be nothing found in that normal stomach because in the great majority of cases the spasm is relaxed under general anesthesia. But we have found in diagnosing these cases a very valuable method of differentiation between spastic and organic conditions of the stomach, and that is by repeated examinations and by the administration of the tincture of belladonna. This is a good thing for a man to keep in mind if he is to rely on the roentgen diagnosis, and if the symptoms of the patient do not coincide with the findings of the x-ray man, the patient must be referred back for further examination. Sufficient belladonna must be given to completely relax the spasm, and that amount I have found to be from twenty to twenty-five drops of the strong tincture of belladonna given three times a day to the physiological effect.

DERMATITIS SEBORRHEICA.*

G. P. LINGENFELTER, M.D., DENVER.

There is still a good deal of difference of opinion on this subject; and it hardly seems advisable in this paper to enter into a long argument for or against conflicting theories as to the actual cause of this disease, which, suffice it to say, is an important symptom complex, that in its commonest form is familiar to all as dandruff of the scalp; and I have very strong suspicions that it is the initial stage of acne. With our present knowledge it may be defined as a catarrhal inflammation of the skin, beginning usually upon the scalp, and characterized by the occurrence of irregularly sized and shaped, pinkish yellow, greasy, scaly patches, which usually give rise to but slight itching.

This affection, which is one of the most widely distributed of all the cutaneous diseases, is not a variety of eczema and must not be confounded with that disease. On the scalp the tendency to hypersecretion of fat is always present and with the thinning of

the hair constitutes in the slighter forms of the disease almost the sole symptom; and invariably when the disease spreads to other parts of the body, the more familiar signs of inflammation appear, accompanied by grayish or yellowish oily scales.

The region most frequently attacked is the scalp, and in a certain percentage of instances the process does not extend beyond this locality, but usually the eyebrows and sides of the nose are also affected, and patches often develop on the chest, especially over the sternum, in the interscapular region, around the umbilicus, and in the axillary and genito-crural regions.

Upon the scalp the disease may be manifested by a furfuraceous scaling, and gradual thinning of the hair with very little associated inflammation of the scalp, in which case it is spoken of as "pityriasis capitis". At times the hair appears harsh, lusterless and dry and the exfoliated scales show no oil or moisture, but as a rule the scalp will be found greasier than normal, the hair slick and shiny, the scales abundant, matted together, yellowish in color and soft and oily to the touch. Seborrheic dermatitis of the scalp is the most frequent of all causes of premature symptomatic alopecia.

On the face this disease may give rise to a persistent, dry, scaly, low grade inflammation which ultimately results in the premature development of senile keratosis, and the lesions in turn may undergo changes and become malignant. Pusey, Sutton and other writers have described a mild form of seborrheic dermatitis which frequently involves the nose, the naso-labial folds, and neighboring areas on the cheeks. The affected skin is greasy and more or less scaly, but not infiltrated and the sebaceous follicles are unduly prominent.

On the trunk the disease is usually confined to the region overlying the sternum, although exceptionally the spots are so numerous and spread so rapidly as to involve almost the entire surface of the body, and when this is the case, the disease sometimes alters in character. The infiltration of the skin disappears and the affection takes on the characteristics of a general exfoliative

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

dermatitis, and is described under the title of "pityriasis rubra seborrheica".

This disease affects all ages and sexes. In infancy seborrhea is appallingly common and there is but little doubt that if it were then more generally recognized and thoroughly treated there would be many fewer cases of alopecia, acne, and malignancy in after life.

In all likelihood seborrhea owes its existence to a specific cause. So many kinds of organisms abound in the scalp that it is not easy to definitely identify the real cause and the several candidates for that honor each have their ardent supporters, while other observers vote against them all. Personally, I believe the nature and cause of the malady point very definitely to a parasitic origin.

The pathologic anatomy of the condition has been most carefully studied by Sutton, Bowen and other dermatologists and all agree that the inflammation is catarrhal in nature and that parakeratosis, or irregular cornification, is always present and usually is a very prominent feature, that epithelial growth, moisture and increased amount of fatty matter are present; regarding the source of the latter, however, their opinions differ.

Seborrheic dermatitis is to be differentiated from lupus erythematosus, eczema, psoriasis, ring worm, pityriasis rosea and papulo-squamous syphilis.

On the face, seborrhea sometimes simulates lupus erythematosus. The scales of seborrhea are yellow and greasy, those of lupus erythematosus are grayish and dry. When the scale of seborrhea is removed the mouths of the glands are often seen gaping, as in lupus erythematosus, but in the latter disease the under surface of the scale is studded with little projections drawn from depressions in the skin.

In eczema the patches are irregularly outlined, the borders are not rounded, there are no yellowish, greasy scales present, and pruritus is a prominent symptom. The eczematous patches show more or less infiltration and there may be oozing of serum.

In psoriasis, the scales are abundant, but they are closely adherent, very dry, and silvery white in color. The distribution should

also be noted. Pusey has called attention to the fact that in psoriasis the predilection is for bilateral distribution spreading toward the median line, while seborrhea develops over the sternum and interscapular region and spreads laterally. Walker of Edinburgh claims that it is sometimes almost impossible to distinguish between the atypical cases of psoriasis and seborrhea on the scalp, and the diagnosis must be influenced by the result of inspection of other areas.

In ringworm the lesion is usually roughly circular, clearly outlined, and has a smooth center and a more or less elevated and inflamed margin. The affection is much more acute than seborrheic dermatitis, the scales are not greasy and there are no sebaceous plugs.

In pityriasis rosea the onset of the disease is fairly rapid and if careful search is made, the "herald spot" may be found, often with a rosy red border not elevated above the surrounding skin, with the center free from scale and of a chamois skin or café au lait color and a dry cigarette paper wrinkled appearance; the lesions are annular and the scales are not greasy and piled up as in the seborrheic inflammation. With this disease the face and scalp are not affected.

The papulo-squamous lesions of syphilis bear some resemblance to those of seborrheic dermatitis and the important point to determine is usually not which disease is present but whether both are. In a large proportion of cases the feeling of the spot is fairly conclusive. If the finger is passed rather firmly over one of the spots, the syphilitic one gives to the observer the sensation of something present beneath the skin as well as on it and in it. In seborrhea the increase is in the epithelial cells, which are heaped up on the surface, but when syphilis is present we have in addition a new growth in the skin, a multiplication of the connective tissue cells. Other signs of syphilis must of course be sought for, and if still puzzled, the physician should have recourse to the Wassermann test.

As to prognosis, while the lesions on the body usually respond promptly to treatment, there is always the likelihood that so long as the disease remains on the scalp, any

slight disturbance of general health or local irritation of the skin will be followed by a recurrence.

No treatment will be successful unless it is thoroughly recognized that the scalp is the important factor in connection with the general disease. As might be supposed, antiseptics offer the best means of combating the affection. The two drugs which have the most influence on seborrhea are sulphur and salicylic acid. They may be applied to the scalp in a more concentrated form than to other portions of the body. Little is gained, however, by commencing with too strong an application. Fifteen grains to the ounce should be tried, but the proportions may be considerably increased if necessary. Among other efficient remedies are tar, resorcin, and the salts of mercury. In order to secure prompt and satisfactory results it may often be advisable to use two or more of these drugs at the same time. During the prolonged treatment which is usually required the patient is apt to tire of greasy applications and under any circumstances they are disliked by ladies, and lotions make a very pleasant substitute; these may be applied with a medicine dropper to the scalp and well rubbed in, and the massage not only aids the penetration of the antiseptics but it also gives rise to a beneficial hyperemia. The hair should be washed with warm soap suds (made with soft water and a good tar soap) once every week or ten days. After rinsing in clear, warm, soft water, the scalp is carefully dried, (a point on which particular emphasis should be placed) and the remedy applied. The use of artificial heat in drying hair is a practice that should be strongly condemned.

It is an excellent plan to remove the oil and the greasy plugs by means of deodorized benzine before applying the remedies. This is a most satisfactory and effective cleansing agent, and is much less irritating to the skin than ether. Lesions on the face are best treated by means of lotions, and for this purpose the lotio alba with a small amount of sulphur added serves admirably.

Grindon and Hardaway have suggested an excellent combination, as follows:

Ammoniated mercury 1.3

Liquor carbonis detergens 4.0
Petrolatum 3.0

Make a paste and apply several times a day to the dry scaling patches that are frequently seen at the border of the scalp.

The thickened epidermal patches (seborrheic warts) of middle aged or elderly persons can be removed by the use of keratolytic remedies such as salicylic acid or by repeated exposures of the x-ray, by the curette, or by the application of carbon dioxide snow. The latter remedy nearly always gives satisfactory results from a cosmetic standpoint and recurrences have been very infrequent. It is much safer and speedier than the x-ray and because of the freedom from possible undesirable effects is much to be preferred. Recently I have been using the Alpine sun lamp, with sufficient exposure to produce an intense erythema, as an adjuvant to local treatment with most satisfactory results.

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THE USE OF THE CAUTERY.*

FROST C. BUCHEL, M. D., DENVER

"The Value of the Hot Iron in Physic" might well have been the title of a medical essay written in 1552 before Paré used the end ligature in amputation stumps.

There are certain therapeutic agents that have withstood the test of time, that have been handed down to us from by-gone ages and will be transmitted by us to future generations. It is probably more valuable to know twenty uses of certain long known therapeutic agents, like heat and water, than to learn twenty new remedies. Many volumes have been written on hydrotherapy; the literature of caloritherapy is meager.

Every large surgical clinic has a daily attendance of visiting doctors from all over the country and, indeed, from all over the globe. Many of these men are well posted and extraordinarily keen in their judgment of the value of a certain clinic. One of the criteria habitually used in estimating the real worth of an operator is the use he makes of the cautery. The man who finds

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a place to use the cautery in almost every operation always ranks high in the minds of these spectators and his clinic is visited again and again and quite always with profit.

To generalize, there are three great indications for the use of the cautery: First, in malignancy; second, to prevent infection; third, to prevent hemorrhage.

Dr. Bloodgood, in his monograph on Tumors of the Jaws, insistently emphasizes the fact that the benign and less malignant forms of sarcoma, the benign and less malignant epitheliomas, and especially the dentigerous cysts and adamantine epitheliomas, have been cured permanently and cured as frequently by conservative operations as by more radical and mutilating interventions. He says that the cautery is the instrument of choice in operating on the epulides, the less malignant fibro-myxo-sarcomas, the giant cell sarcomas and the dental tumors. The simple cellular sarcomas, which represent various combinations of spindle and round cells, and the angio-sarcomas have not been cured by any means. The same may be said of carcinoma of the antrum. If one is unable to make a correct diagnosis of a malignant jaw tumor, it is infinitely wiser to subject the patient to a very thorough local removal with the cautery than to a mutilating removal of the jaw. It has happened that a patient has succumbed to this very radical operation and an examination of the tumor afterwards has revealed the fact that it was benign.

Last month, *The Annals of Surgery* published a paper by Dr. Ochsner on *Clinical Observations Concerning Malignant Tumors of the Jaws*. Sixty-seven carcinomas, sixteen epulides, sixteen sarcomas and one chondro-sarcoma are reported, making one hundred cases in all. The chief point of the paper is that a vigorous use of the cautery gives the most cures. The cautery was used in every one of his cases. Certain of his conclusions are as follows:

First, malignant tumors of the jaw are much less likely to recur when removed with the actual cautery than when removed with the knife, although the latter opera-

tion may have been carried out with the same degree of thoroughness.

Second, it is a good rule to make the primary removal much more extensive than seems necessary, because, even then, the amount removed will be much less than what one will be forced to remove in case of recurrence.

Third, the histological appearance of epulis indicates greater malignancy with each successive recurrence after repeated removal. If removed thoroughly with the actual cautery during the first operation, this tumor does not recur.

Every one who has been much in the operating room at the Augustana Hospital has seen the large soldering irons they use there. The cauterization is continued for a considerable time to permit the surrounding tissues to become heated to 160° Fahrenheit. Laboratory experiments, Dr. Ochsner says, have shown that carcinoma grafts in mice will not grow after being exposed to a temperature of 160° Fahrenheit.

An intelligent criticism of this article is impossible as certain necessary data are not given. Sixteen sarcomas are reported. It is not stated what varieties of sarcoma these were. The exact location of the growths is, in like manner, not stated. It makes a tremendous difference in prognosis whether a tumor is an alveolar border tumor or one arising from the body of the jaw. The permanent result of the series was not determined. However, the firm conviction of a man like Dr. Ochsner that every malignant jaw tumor should be removed with the cautery deserves the greatest consideration. Gordon New of Rochester has devised a water speculum to use in the mouth which is a very great technical aid in the proper cauterization of mouth and jaw tumors.

Cauterization of the cervix in carcinoma is an old method of treatment. In recent years the technic of this procedure has been modified and improved by Percy of Galesburg. Percy's contention is that a very hot iron soon chars the tissues and heat penetration is thereby prevented. He therefore uses what he terms the cold iron, which slowly cooks the tissues. He has devised a water speculum so that the vaginal walls

will not be burned. The embryonic cancer cell is destroyed at a lower temperature than the mature normal cell. The actual difference has not been determined. William J. Mayo says it is probably from fifteen to thirty degrees. Percy deserves rather more credit than he has received for the refinement of technic he has elaborated. In inoperable cases of carcinoma of the cervix with hemorrhagic oozing it has proved very serviceable. In cases with a very foul smelling discharge due to a secondary infection implanted upon the carcinoma, the thorough cauterization with the Percy cautery has given satisfactory results. The chief danger is that when the slough from the cauterization comes away secondary hemorrhage may occur. This has been obviated in many cases by a preliminary ligation of the internal iliac and ovarian arteries. The opening of the abdomen also permits the hand of an assistant to be placed in the abdomen, surrounding the uterus, to act as a guide for the cautery point and also to judge of the degree of heat actually obtained. At a secondary operation a month later a hysterectomy can be done.

In many of the cases that appear to be inoperable at the time of the preliminary operation the thorough cauterization cures the patient of the inflammatory element of her disease, and the remaining cancer is found to be perfectly operable. Some of these patients are best treated with the clamp and cautery vaginal hysterectomy. In the carcinoma of the cervix cases that are not inoperable but have a foul smelling cervical discharge, a preliminary use of the cautery, either the Percy or an ordinary electric one, to sterilize the cervix is a very sensible procedure. In a few minutes a large, hyperemic, sloughy cervix can be charred, the serum fairly pouring out of the vagina. Hysterectomy can then be done at once with much less danger of infecting the peritoneum with either cancer cells or with the micro-organism of suppuration.

Several years ago Dr. Judd at Rochester operated upon a series of carcinoma of the breast cases with the cautery. The knife was not used at all. The operations were beautifully done and were almost bloodless. Pain after the operation was almost nil.

The theory was good and appealed to one. The method was discontinued, however, because there was delayed skin union in too large a percent of the cases. I have seen Dr. Greenough of the Massachusetts General Hospital, in cases that are rather far advanced, make his skin incision with a knife and do the balance of the operation with the cautery.

Dr. H. H. M. Lyle in his article on The Breast, in Johnson's Operative Therapeutics, says: "If the slightest suspicion is entertained about the thoroughness of the removal, the actual cautery should be lightly passed over the doubtful area. The cautery destroys the neglected cancer cells, sears up the open-mouthed blood vessels and lymphatics, thus reducing the risks of future dissemination."

In taking a section of breast tissue for frozen section microscopic examination, the cautery knife is ideal. If the pathologist reports positive for cancer, a radical breast amputation can be done with the assurance that cancer cells have not been scattered by the preliminary removal of the section.

I have seen Dr. Charles Mayo do a Kraske operation entirely with the Paquelin cautery. It would have been much more easily accomplished if he had used a good electric cautery such as they have now at Rochester.

In carcinoma of the bladder, wide cautery removal of the tumor has apparently given the best results. The base of the tumor should be thoroughly cauterized. In 1912 J. Bentley Squier did some experimental work to determine the effect of electrical cauterization on neoplasms in the laboratory of Francis Carter Wood, Director of the Crocker Cancer Research. This work throws light on the comparative merits of fulguration versus the actual cautery. His conclusions were, first, that the current is not entirely a harmless agent; second, that it does not actually char the tissues very extensively; third, that it does not affect extensions outside the field of the main growth; fourth, that its action is simply that of an easily handled cautery. Fulguration has many very valuable uses. When one has a malignant tumor of the bladder, however, in the light of Squier's findings, open operation with cautery removal and thorough cauter-

ization of the base of the tumor would seem to be the operation of choice. Fulguration has also been used on tumors in other locations than the bladder, as in carcinoma of the breast by the method of Keating-Hart, but the method is probably inferior to that of the actual cautery.

Under the heading of the second indication for the use of the cautery, prevention of sepsis, there are many points to be mentioned. In draining an abscess of the lung after securing an adhesion between the visceral and parietal pleurae and locating the pus with an aspirating needle, cautery drainage seals the lung tissue and prevents the absorption of infection and also minimizes hemorrhage.

In abdominal surgery the cautery is invaluable. Cautery destruction of a gastric ulcer as suggested by Balfour is a simple and effective procedure. A number of electro-thermic hemostatic clamps have been suggested. The one elaborated by Downes, as published in the *Boston Medical and Surgical Journal*, July 10, 1902, is probably the best one. The claims made for the clamp, that lymph ducts are sealed, the stump rendered sterile, danger of adhesions lessened and less post-operative pain experienced are all probably just. The claim of effective hemostasis has not been substantiated and one now rarely sees this clamp used. The Payr clamp with the actual cautery is used in quite every clinic in the resection of intestine and in stomach resections. The seared out surfaces are of course secured by suture. After using this method for years one dislikes greatly to do a stomach or intestinal resection by any other method. In appendectomy and cholecystectomy, the cautery knife affords one a safe and quick method of stump sterilization. This method is the routine in many hospitals.

In a supravaginal hysterectomy, cauterization of the cervical canal eliminates, perhaps more certainly than any other method, the danger of infection arising from this source.

Kelly, at Johns Hopkins, treats patients having a gonorrheal leucorrhea with the cautery. The cervix is burned out thoroughly. In some instances the treatment must

be repeated. The after treatment consists in the occasional passage of a uterine sound to prevent an atresia of the cervical canal. I have treated one case of very early acute gonorrheal endocervicitis with the actual cautery. Before the discharge from the cauterization ceased it was negative for gonococci and the whole infection was eradicated with the one treatment. Two weeks afterwards there was no discharge, and smears taken from the cervical canal were negative. It is not often that one sees an early case of gonorrheal endocervicitis unaccompanied by urethritis. When such a case is encountered, it would be interesting to see if similar results could be obtained.

Trachelorrhaphy is not performed as frequently now as formerly. The very bad lacerations are rather apt to be treated by an amputation of the cervix and those that are not so severe by a thorough cauterization of the cervical canal with the actual cautery. The ultimate results with the cautery treatment are excellent. A large infected and hyperemic cervix with an angry looking laceration, after the cautery treatment, contracts down and looks quite normal and the leucorrhea is checked. Sounds should be passed a few times to prevent stenosis.

In certain very virulent infections, such as noma, the actual cautery offers the best means of control. A patient was in my office today, a baby not two years old, in whom I burned out the inside of the cheek two weeks ago for noma. The infection was checked immediately and now in two weeks the child is well and physical examination is negative except for a small unhealed slough at the site of the gangrenous area.

At the time this case of noma was in the hospital, I also had there a case of actinomycosis of the jaw that I treated by a very thorough cauterization. This man was operated upon elsewhere nine months previously. It is too soon to report this patient as cured, but, in years past, I have had patients remain well after a thorough hot iron treatment in actinomycosis. I think it is probably the best means in operating upon this stubborn disease.

Sir Berkley Moynihan, in his address at Chicago in October, 1917, on the treatment

of war wounds, mentioned the actual cautery as one of the means used to sterilize the wound and also to char the damaged tissue so that it could all be excised preliminary to an immediate suture.

Certain fistulas, as a pancreatic fistula, have been treated with the actual cautery. Various eye conditions, as a corneal ulcer, are at times correctly treated by the cautery. The very extensive use of the electric cautery in the treatment of tonsillar infections now has been almost entirely abandoned in favor of tonsillectomy.

The third great indication for the use of the cautery, namely the control of hemorrhage, is not now so popular as formerly. The clamp and cautery operation for hemorrhoids is the most notable exception.

The Bottini operation is not now looked upon with favor, but the Chetwood modification is used and it depends on the cautery knife to check hemorrhage. Keyes said in 1915: "During the past ten years I have employed the Chetwood operation for about one-quarter of my cases of prostatic hypertrophy. I have also employed it for the removal of all minor obstructions, such as bars and contractures at the bladder neck, when simple perineal section is likely to prove inadequate to afford a proper drainage for the bladder."

Nevi have been treated successfully with the electric needle. Certain nasal operations have been done with the cautery knife.

In medicine, the cautery is used as a counter irritant in lumbago and in various inflammations, as in arthritis. I have had used on me for lumbago both ignipuncture and the actual cautery. The treatment conforms to that good old rule, "All good medicine is bad".

An exhaustive discussion of the use of the hot iron in surgery would be much too long to read at this meeting. The above suggestions, however, serve to indicate the extensive applicability of the cautery and its very great value.

552 Metropolitan Building.

MESENTERIC THROMBOSIS, WITH A REVIEW OF THE LITERATURE.*

LEWIS I. MILLER, B.A., M.D., DENVER.

Although embolism or thrombosis of the mesenteric vessels is rare, comparatively speaking, it is nevertheless the most serious of abdominal diseases. This, together with the facts that until recently, the attention of the profession has not been called to the condition by any comprehensive article; that those existing are not in the English language; that it forms a disease picture of very difficult clinical diagnosis; and that in any case, operation offers practically the sole chance of recovery, the mortality even then being over ninety-four percent, seems to justify this investigation.

The fact that English investigators have not written extensively on this subject was well illustrated in the present investigation, when in the vast amount of literature in the Crerar Library of Chicago only two articles in English on Mesenteric Embolism and Thrombosis were found. Even these two articles did not exhaustively treat of the condition.

Taking up the subject in a systematic manner, the physiologic causes of clotting of the blood within living vessels are first to present themselves. Physiology teaches that the blood is kept fluid in the body by being kept in constant motion, in contact with a smooth organized living surface. If any of these conditions essential to its fluidity ceases to exist, spontaneous coagulation is the unavoidable result. These facts have been recognized for centuries, but the direct cause of the coagulation is still a matter of dispute.

This change has been universally attributed to the production and metamorphosis of fibrin, but what causes fibrin to solidify remains for present or future physiologists to explain. According to most authorities, fibrin pre-exists in healthy living blood in proportion to two parts in a thousand, while others, and among them Rindfleisch, claims that it does not exist in fluid blood, but is

*Read at a clinical meeting, September, 1918, at the West Side Hospital, Chicago, in connection with the meeting of the Illinois Surgical Society.

a product formed during the process of coagulation, by a combination of globulin from the blood globules and fibrogenous substance from the liquor sanguinis.

Several theories have been advanced to explain coagulation of fibrin. Henson supposed it to be due to exposure to the atmospheric air, but it has been repeatedly ascertained by experiment that coagulation will take place in a vacuum. It seems to us, however, that the theory of Dr. Howell, in his book on physiology, is the most plausible, at least the case that we are about to report fits in with his theory. Dr. Howell maintained that the blood is kept fluid in the vessels by being kept in constant motion, in contact with smooth, organized living surfaces of the vessels. When the wall of a vessel is injured, the injured cells function as an activator for the production of thrombokinase, changing fibrinogen to fibrin and in that way causing clotting, the theoretical formula being:

Cellular elements=thrombokinase. Thrombokinase+calcium+thrombogen=thrombin. Thrombin+fibrinogen=fibrin.

Etiology. All those diseases which lead to the formation of thrombi, whence emboli may arise, are of direct etiologic significance for mesenteric occlusion. Endocarditis, atheroma of the aorta and arterio-sclerosis, especially of the mesenteric arteries, are of the first rank. Sclerosis of the mesenteric vessels has been found even in cases in which the peripheral vessels or the aorta showed no atheromatous changes, and this process may involve the finest branches. The results are obvious and are well stated by Neutra, a German writer, who says: "By the calcification, the arterial wall loses its elasticity and becomes narrowed, a condition which hinders the formation of collateral circulation through the anastomoses."

Lorenz has published a case of closure of the superior mesenteric artery which followed multiple neuritis. The process was characterized by a growth of the intima of the fine branches, combined with nodular dilatations.

In the cases of venous thrombosis, all conditions causing stasis in the portal system play a causative rôle. Here it is a question whether the thrombosis is primary in the

mesenteric veins and, therefore, an ascending one, or is itself secondary to a process beginning higher up. As a matter of fact, both sorts of cases seem to occur. All intestinal changes which allow penetration of bacteria into the vessels are of etiologic importance for primary thrombosis. Such are the severe enteritides, surgical infections, puerperium, milkleg, and phlebitis of the lower extremities; cachexias such as that of cancer or malaria, sepsis and typhoid fever. Here also should be mentioned cases following chronic appendicitis, direct trauma to the vessels causing an injury to the vessel wall. This latter type is probably illustrated in the present case.

Secondary venous thrombosis follows cirrhosis and syphilis of the liver, pylephlebitis and processes at the liver hilum which by pressure or the formation of adhesions cause portal stasis. Krester maintains that slowing of the circulation is in itself unable to cause thrombosis, and gives this only as a predisposing cause. Neutra opposes this view, however, and certainly the weight of evidence of reported cases seems to be in his favor. In several cases also thrombosis of the veins has followed arterial emboli, apparently by the stasis thus brought about.

Course of the Disease. The cases may be divided into two groups: acute and chronic.

The first group is by far the most important and is composed of cases of sudden onset of colicky abdominal pain, often occurring at a time when the patient has been in apparently full health. This is followed by nausea and vomiting, often vomiting of blood, and diarrhea, also often bloody; or the picture is one of obstinate intestinal obstruction of the paralytic type. Often not even flatus is passed. In many cases the temperature falls below normal, the abdomen rapidly becomes distended with gas, peristalsis is absent, and death occurs in a few hours or days.

The second and smaller group is formed by cases of insidious onset and chronic, sometimes remitting, symptoms; by cases having no symptoms referable to the abdomen during life, and by cases where spontaneous cure resulted.

In reviewing the literature obtainable, and analyzing two hundred and fourteen cases, we find the following: In only one hundred and ninety-seven cases are accurate statements obtainable which may form a basis of separation into arterial and venous varieties. Of these, one hundred and twenty cases, or sixty-one percent, were of arterial closure, while seventy-seven cases, or thirty-nine per cent, were of venous. In seventy-one of the arterial and in fifty of the venous cases in this group, accurate data as to the duration were given. They are tabulated as follows:

VEIN.

Duration	Percent
24 hours	20
2 days	18
3 days	8
5 days	12
1 week	16
10 days	2
2 weeks	8
3 weeks	10
1 month	4
6 weeks	2

ARTERY.

Duration	Percent
24 hours	20
2 days	22
3 days	10
4 days	10
5 days	3
1 week	17
10 days	6
2 weeks	10
1 month	1
5 weeks	1

It thus becomes evident that the courses are surprisingly similar in each variety of case and that no differentiation can be made on this point.

In each group there were seven cases of markedly chronic courses, that is, over two months duration. Of these, the ones due to venous closure were more apt to show gradual and continuous progression, while the arterial were apt to have a course of various attacks, interrupted by longer or shorter intervals of comparative health. Neutra lays special stress upon the latter and calls them chronic, relapsing cases.

Pathology. Pathologically, occlusion of mesenteric vessels was described as early as 1847 by Virchow. There followed experiments by several men, notably Cohnheim, Titten and Cohen, which showed conclusively that the result of stoppage of blood supply to the intestines is divided into four stages: first, necrosis; second, gangrene; third, hemorrhagic infarction; and fourth, abscess formation.

The general results of stoppage of blood supply are well given by Ribbert in his *Allgemeine Pathologie*: "What happens to a vascular area in which the circulation is incompetent? It must necessarily at last be destroyed, but the conditions of this destruction are not always the same. In the cases in which an end artery is involved, the area, under certain conditions, receives so little blood from capillaries or veins that it becomes essentially paler than the surrounding area; when, besides this, the small amount of blood loses its color, the area becomes a clear yellow white."

More frequently, however, there is a marked filling of the area with blood, which by its presence stops further accession of blood to the parts, then the area becomes pale and forms an anemic infarction.

In other cases, when the vein is stopped, with each beat of the heart a volume of blood is brought to the part, the liquid escapes into the peritoneal cavity, and the solid particles pile up into the wall of the intestine, causing the wall to become thicker. The pictures found at operation in late stages and at postmortem examination are most varied, depending on the situation of the occlusion and the duration of the process. So the infarcted area may show only simple hyperemia, or there may be gangrene, perforation and peritonitis, either localized or general. In the large majority of cases, as in the present case, there is fluid in the general cavity, often blood stained. It is, however, blood serum only, the solid matter of the blood remaining in the walls of the intestines. In some cases the boundary between healthy and diseased gut is absent. In the present case it is easily demonstrable.

Age and Sex. Of the cases reviewed, sixty-four percent occurred in men and thirty-six

percent in women. One case occurred at one month, another at five years and another at eight years. The rest were as follows:

10-19 years	4%
20-29 years	12%
30-39 years	16%
40-49 years	22%
50-59 years	18%
60-69 years	15%
70-79 years	8%
80-89 years	3%
90-99 years	2%

It is thus seen that over one-half of the cases occurred between the thirtieth and sixtieth years of life.

Symptoms and Physical Signs. Pain: In one hundred and fifty-seven cases accurate data as to pain were given as follows: general abdominal pain, 51 percent; pain in epigastrium, 8 percent; pain about the umbilicus, 7 percent; pain in lower abdomen, 4 percent; pain in right hypochondrium, 4 percent; pain in upper abdomen, 4 percent; pain in hypogastrium, 3 percent; pain in right iliac fossa, 3 percent; pain in right side of abdomen, 2 percent; pain in left hypochondrium, 2 percent; pain in left side, 8 percent; pain absent, 4 percent.

Nausea and Vomiting: This is usually present following the pain. According to the severity and duration of the process, the vomitus is either normal stomach contents, bile-stained, fecal or, finally, clear blood.

Diarrhea or Constipation: According to Kussmaul and Gerhardt, bloody stools are essential for the diagnosis. These authors say it is found in over ninety percent in the later stages, i. e., after the pathology has existed for several days, and is found in forty-one percent at the beginning of the disease.

Abdominal Tenderness: This was noted in one hundred and fifteen cases. In the present case abdominal tenderness was marked; even slight palpation caused distressing pain. Its localization when present is according to the following table:

Location	Percent
General abdominal	67
About navel	8
About cecum	7
About epigastrium	7

About hypogastrium	4
On left side of navel.....	2
About right hypochondrium	2
About McBurney's point	1
About right costal border.....	1
About several points in hypogastrium..	1

Distension: This is usually a late sign and one of increasing severity. It was mentioned in one hundred and twenty-five of the cases.

Intestinal Obstruction: This is one of the most important appearances and occurs rapidly in many cases. In some instances the ensuing peritonitis is undoubtedly the cause of the ileus, but that this is not always the case is shown by cases where it follows immediately the closure of the vessel, at a time when there can be no question of either peritonitis or necrosis of the gut wall having yet occurred.

Temperature: The temperature usually falls below normal, though not infrequently an increase is observed, which perhaps is due to accompanying processes, such as peritonitis, endocarditis or toxin absorption from the intestinal contents.

Hiccough: This is a symptom of minor importance, which is recorded in a few cases.

Diagnosis. This is admitted by all to be exceedingly difficult, the more so because the symptoms have the same causation as in other abdominal lesions. Gerhardt makes the following diagnostic postulates:

1. There must be present a source of the embolus.
2. There are present copious intestinal hemorrhages, unexplainable by disease of the gut wall or by hindrance to the portal circulation.
3. There is quick and marked fall of body temperature.
4. There are colicky abdominal pains, which may be very severe.
5. Later distention of the abdomen and free fluid occur.
6. Emboli of other parts may have been present before or may occur simultaneously with closure of the mesenteric vessels.
7. There occurs sometimes a large palpable blood tumor between the layers of the mesentery.

Clinically it is very rare to find all these

points present and so the diagnostic value of the above scheme is considerably impaired.

Prognosis. As has been seen from the description of the course of the disease, the condition is a very fatal one. Even granting the diagnosis to be correct in all the reported cases, we have a mortality of about ninety-four percent. The condition is admirably summed up by Neutra, whom we quote: "In cases of acute onset, the prognosis is indeed very grave, but by no means absolutely bad, since behind these severe symptoms there may be hidden a chronic process which favors the formation of a collateral circulation, and on this the prognosis depends. If, on the other hand, the course is a chronic one, and only a few exacerbations are present, between which there is a complete absence of symptoms, the prognosis, nevertheless, is moderately bad, since in these cases it must be assumed that because of some hindrance a competent collateral circulation can not be formed."

Treatment. Basing his treatment upon what has gone before, Neutra advises, in the early stages, drugs to increase the blood pressure, or a light abdominal massage to displace the clot if possible and spread it into the smaller branches. However, both of these forms of treatment seem to be fanciful and useless. It does not seem to us that any treatment is rational except that of exploratory laparotomy, in every case, if the patient's general condition will warrant it, and as soon as even a tentative diagnosis is made.

Operation has been done for the condition in forty-seven of the reported cases, with a mortality of ninety-two percent, only four cases having recovered so far as we could ascertain from reports. Autopsies showed the following extent of involvement: In one case, one inch of large intestine; in one case, two inches of large intestine; in two cases, four inches of large intestine; in two cases, eight inches of large intestine; in two cases, ten inches of small intestine; in two cases, twelve inches of small intestine; in two cases, sixteen inches of small intestine; in two cases, twenty inches of intestine; in two cases, two inches of small intestine; in two cases, thirty-one inches of small intestine;

in two cases, thirty-eight inches of small intestine; in four cases, thirty-nine inches of small intestine.

Case Report. The present case is that of an American woman, aged twenty-two, of German descent, unmarried, a school teacher by occupation, of good habits.

Family history: negative.

Past history: The patient has had measles, chicken-pox, occasional sore throat; no other diseases of adult life or child life.

Present illness: Two weeks ago, she was kicked in the abdomen while skating. She had no bad after symptoms, except slight dull pain in the right lower abdomen around McBurney's point. She did not associate the pain with the injury until four days ago, when she was suddenly taken down with a severe attack of pain, which was generalized over the abdomen and accompanied by nausea, vomiting, severe constipation and subnormal temperature.

The patient was seen by the family physician, who made the diagnosis of appendicitis and gave the patient morphine sulphate, one-quarter grain. Two days later she was seen by another physician who made the diagnosis of a ruptured appendix. He gave the patient morphine, one quarter grain, and sixteen hours after that she was brought to the West Side Hospital of Chicago with a diagnosis of ruptured appendix, the case being referred to Dr. T. A. Davis and put in my charge for examination and diagnosis.

Physical Examination: The patient was a well developed and very well nourished subject. The pupils were contracted, due to morphine; they did not react to light. The patient was in a state of semi-consciousness and unable to speak, but on palpation showed signs of severe pain and distress. Muscular twitchings of the facial muscles were elicited. The facies and contour were those of severe shock and toxemia. On palpation, the right side of the abdomen was tympanitic, while the left side gave a decided dullness. No palpable mass was found. As these palpatory findings were elicited, Dr. Davis and I agreed that this was a case of mesenteric thrombosis and not a ruptured appendix. The glands on both sides of the neck, in the right and left axillae, and in

the groin, were negative. On auscultation, the heart beat was irregular, rapid and weak; the heart, negative. The respiration was shallow, labored and the rate about thirty per minute; the lungs, negative. The pulse was one hundred and thirty-six per minute. The temperature was 97.2°, per rectum. The reflexes were absent in both patella and eye.

Laboratory findings: A complete blood count revealed twenty-eight thousand leucocytes, with a differential count of eighty-six percent polymorphonuclear and fourteen percent mononuclear cells. The red blood cell count was five million, five hundred thousand. The hemoglobin was ninety percent.

A complete urinalysis gave albumin, but no casts, sugar, acetone nor indican.

The feces obtained by an enema gave a very positive Weber, in fact the enema was only partially recovered as 2,000 c. c. were injected and only 1,000 c. c. recovered. This material was of a dark tarry consistency with but a slight odor of feces.

The patient was taken to the operating room and an exploratory operation was performed, the Miculicz technic being used. She survived the operation but died in shock four hours later.

Pathology: The gross specimen consisted of a loop of descending colon of about twenty-five to thirty centimeters in length, with a good deal of mesentery. With the exception of three to four centimeters at each end, the intestine presented the following appearance: it was of a black red color, and at least twice as great in diameter as normally, the peritoneal surface showing considerable thickness. On section, the entire wall of the intestine was densely infiltrated with opaque, thick fluid, the same fluid being found in abundance in the lumen of the intestine. Here and there red, freshly infarcted areas were visible. The mucous membrane in general was of a blackish, moist appearance with no definite ulcerations. The portion of the mesentery adherent to the intestine was markedly infiltrated with black, thick fluid.

The condition of the intestine as described ceased rather abruptly at a point about four to six centimeters from each extremity of

the specimen, where there was fairly marked constriction. The serous surfaces of these extremities of the specimen also showed some fibrous thickening.

Microscopic examination of pieces of mesentery attached to the intestine showed thrombosis of fairly large sized veins, but none of the arteries. The thrombus material of the vein was composed chiefly of red blood cells, together with a small amount of fibrin and a few polynuclear leucocytes. Some of the veins showed infiltration of the walls with polynuclear leucocytes. The tissue showed extensive hemorrhage. The wall of the intestine also showed a great deal of thickening and infiltration with red blood cells, fibrin and polynuclear cells.

The appearances in the sections do not admit of a definite conclusion as to whether the thrombosis of the veins was the cause of the condition in the specimen or not; the thrombosis might be secondary.

During the practice of Dr. T. A. Davis, he has met with five cases, two of which I have had the extreme pleasure of assisting him with, this being the first case of a thrombus of the mesentery of the large intestine, three of the other cases being of the small intestine and the fourth giving a doubtful history.

Metropolitan Building.

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The next meeting of the Colorado State Medical Society will be held in Denver, October 7th, 8th and 9th. Members having papers to offer for the scientific program should send their subjects to the chairman of the Committee on Scientific Business, Dr. Edward Jackson, 318 Majestic Building, Denver.

News Notes

Lieutenant-Colonel H. C. Dodge, writing May 5th from New York City, has the following to say:

"Allow me to acknowledge receipt of membership card and certificate for 1919, which were forwarded to me here from Steamboat Springs. I landed here from France on April 16th in command of the 115th sanitary train, which was held for duty at the port of Hoboken and have since been assigned to duty at U. S. army general hospital No. 1. I have seen Lieutenant-Colonel F. J. Pierce, M. C., and Lieutenant Ray Taylor, M. C., both of Pueblo." Colonel Dodge gives the following as his present address: H. C. Dodge, Lieutenant-Colonel, M. C., U. S. A., U. S. General Hospital No. 1, Williamsbridge, New York City, N. Y.

Major A. J. Chisholm of Trinidad has returned home from France, having received an honorable discharge from the army, and has resumed his practice.

Captain C. T. Knuckey of Lamar has returned from France to his home town to resume civil practice, having been honorably discharged from the army medical corps.

Dr. A. C. Magruder of Colorado Springs, who recently returned from service in the medical corps, has been advised of his promotion to a lieutenant-colonelcy, in accordance with a recommendation which was made and approved last November.

Dr. B. B. Grover of Colorado Springs has been elected president of the Western Electro-Therapeutic Association.

Dr. H. O. Dodge of Boulder arrived home May 11th from California, where he has been since last December.

Dr. R. W. Corwin of Pueblo has received the honor of an appointment by the Rockefeller Institute as a special representative in Europe to study the treatment of osteomyelitis.

Maj. H. S. Finney of Denver has been mustered out of the military service and has resumed practice at his old office in the Majestic Building.

Dr. B. B. Blotz of Rocky Ford who, it is understood, had a stormy time following an operation at Rochester, Minn., was expected to arrive home in the latter part of May.

Dr. H. S. Finney of Denver has been elected president of the Clinical Review Club for the ensuing year.

Dr. M. D. Healey of Denver, who enlisted in the Canadian army medical corps in 1918, was expected to return to Denver in the early part of June and resume his practice.

Dr. J. D. Davies of Alamosa has been honorably discharged from the service overseas and has resumed practice at Alamosa.

Dr. W. T. Little of Cañon City has resumed his practice, having been honorably discharged from the medical corps of the army.

Dr. A. T. King of Pueblo, long identified with the surgical work of the Denver and Rio Grande and Colorado and Southern railroads, has closed his office in Pueblo and will take up a permanent residence in the East.

Dr. E. D. Swerdfeger of Denver, who was with the 103rd infantry of the twenty-fifth division of the army, and took part in the Argonne drive, has been honorably discharged and has returned to Denver where he will resume practice at his former office.

Word has been received that Dr. B. A. Filmer,

whose interesting account of his experiences in the Argonne forest appeared in a recent issue of Colorado Medicine, has been promoted to a majority.

Dr. J. L. Mortimer of Denver, who was incapacitated by illness in the latter part of May, is again able to be out and has resumed his practice.

Dr. Albert E. Smith, formerly of Rifle, is now located in Glenwood Springs where he expects to limit his practice to general surgery and diseases of the rectum.

Dr. J. N. Hall, since his return to practice in Denver, has been notified of his appointment as a Lieutenant-Colonel in the Medical Officers' Reserve Corps.

Dr. Chas. A. Powers of Denver, who served two and a half years in the American Ambulance Hospital in Paris and Neuilly, France, returned to Denver in the middle part of May.

Lieutenant-Colonel A. J. Campbell of Denver, having returned from his service over-seas, has been assigned to general hospital No. 21 at Aurora, as chief of the surgical service and chief of the sanitary service.

Capt. C. G. McEachern of Denver has received an honorable discharge from the medical corps and has resumed practice in his old office, 330 Metropolitan building.

Dr. C. B. Ingraham of Denver has resumed practice at 674 Metropolitan building, having received an honorable discharge from the army.

Dr. O. E. Coleman, having been honorably discharged from the army medical corps, has located in Denver and announces that he will limit his practice to roentgenology, with offices in the Majestic building.

Dr. William Whitridge Williams, who has been honorably discharged from the medical corps of the army, has announced resumption of his practice at 503 Majestic building.

Dr. H. S. Finney has been honorably discharged from the army and has resumed practice in Denver, at 619 Majestic building.

Dr. Guy A. Ashbaugh, who was honorably discharged from the army on April 30th, has returned to Merino, and has resumed practice in association with Dr. W. B. Lutes.

Dr. W. B. Lutes of Merino was in Denver for a few days in the latter part of May.

Twelve nurses received their diplomas of graduation from the Denver County Hospital on May 28, and twenty-two from St. Joseph's on June 2.

Major T. E. Carmody of Denver, who has been in the service at U. S. general hospital No. 21 as chief of head surgery and, for two months, chief of the surgical service, has been honorably discharged and is again giving his full time to his private practice at his offices in the Metropolitan building.

It is stated that Major W. H. Bergtold, who is in charge of the medical service at U. S. general hospital No. 21, Aurora, will be honorably discharged from the service in the latter part of June.

El Paso County News.

Dr. M. O. Shivers has gone to California for a three months' vacation.

Dr. Wilbur Fiske Martin is visiting eastern clinics.

Dr. F. A. Faust is visiting clinics in Chicago and New York.

Drs. J. H. Brown, H. Hoagland and Thomas Knowles have received honorable discharges from the army and have resumed practice here.

"DIRTY POLITICS."

May 28, 1919.

To the Editor of Colorado Medicine:

Dear Editor—In a city which without much stretching of the imagination is regarded as one of the most populous and important in the state of Colorado, the moving finger of fate, in the form of politics, has recently written and moved on.

The city and county hospital of the city in question has for several years been under a superintendent who succeeded in giving an efficient and economical hospital administration surprisingly free from the taint of political influence. He was, however, indiscreet or unfortunate enough to express himself as favoring for the office of mayor a candidate who proved unsuccessful in a recent city election. This, while theoretically the inborn right of every American citizen, was in reality a very dangerous thing to do. "Vae Victis!" In more modern language, "To the victors belong the spoils".

The returns of the election had barely been announced in the newspapers when the superintendent was, officially speaking, decapitated. Moreover, he was accompanied into his more or less delicately enforced retirement by the chief nurse of the institution, its night supervisor of nurses, its chief operating room nurse, its dietitian, and several subordinate officials. It is a fact of interest that this bloodless revolution was accomplished by a member of the Colorado State Medical Society who has at various times acted respectively as mayor and superintendent of the city and hospital in question.

It may be that the future administration of the hospital (and of the city) will be freer than in the past from mismanagement and from the grosser evidences of political favoritism and corruption. It may be that the precipitate relinquishment of the services of several hospital administrators whose work has been admired by the local medical profession is not a foretaste of the policy which will be followed in every department of the city administration. It may be that we are not relapsing into the political quagmire of fifteen or twenty years ago. While there is life there is hope. But—

Yours sincerely,
WILLIAM H. CRISP.

Summer Courses at Boulder.

The announcement of the summer quarter, 1919, of the University of Colorado, which will consist of two terms, from June 30th to August 2nd and from August 4th to September 6th, shows that in the field of medicine there will be courses in general bacteriology, practical bacteriology, biochemistry, blood chemistry, chemical laboratory methods, and advanced pathology.

These courses, while open to undergraduates, are designed primarily for practicing physicians, for nurses and others who may desire to prepare themselves to fill positions as laboratory assistants to physicians. The laboratory methods course, under Prof. James C. Todd, takes up the following subjects: sputum, urine, stomach contents, feces, pus and miscellaneous examinations; animal parasites, blood. Any of these may be taken up separately by special arrangement. A laboratory fee of eight dollars will be charged and a deposit of five dollars required, the unused portion of which will be returned. The hours will be from eight to twelve o'clock.

The pathology course will be under the supervision of Prof. Ross C. Whitman. Laboratory fee, five dollars. Deposit required, five dollars.

Medical Societies**CITY AND COUNTY OF DENVER.**

The regular meeting of the **Medical Society of the City and County of Denver** occurred Tuesday, May 6, 1919, with President Jackson in the chair.

Drs. Madeline Marquette Baker, Abraham M. Blumberg, H. G. Emery, Robert Lewis, Bert Menser, Morris Prinz, William E. Stemen, Herman Frederick Thulin and Newton Wiest were elected to membership in the society.

The society passed the following motions: That a committee of five be appointed to make arrangements for the entertainment of the State Medical Society; and that a committee of five or seven be appointed to cooperate with the State Society committee in the preparation of a souvenir volume to commemorate the semi-centennial meeting of the society in 1920.

Dr. C. N. Meader spoke in favor of the new bond issue proposed, relating to the county hospital and the proposed municipal tuberculosis hospital.

It was moved and carried that a protest be sent to Postmaster Burleson and the president of the Mountain States Telephone and Telegraph Company against the omission from the telephone directory of the room numbers of doctors' offices in the Metropolitan building.

Since Dr. C. E. Edson proposes to make a complete roster of all members of the society who served in state, federal or Red Cross work during the war, Dr. Jackson suggested that anyone connected with the various organizations confer with Dr. Edson.

The scientific program began with a paper by Dr. Leonard Freeman upon "An Easy and Reliable Method for the Operative Treatment of Uterine Prolapse". The procedure, which is especially suitable for the more marked cases, consists in the suspension of the uterus from the tendons of the recti muscles by means of a strip of fascia lata, which is very strong, does not stretch, as will the round ligaments, and remains permanently in place without absorption, as proved by an examination made a year after the original operation. The fascial strip is drawn through the fundus of the uterus, avoiding its cavity, and is securely fastened over the tendons of the recti. Eleven operations were reported, extending over a period of about five years, without any recurrences of prolapsus. This paper was discussed by Dr. T. M. Burns.

"Some Observations at the British Facial Reconstruction Hospital" followed. Dr. W. C. Finnoff discussed the work on the eye, Dr. William M. Bane, on the nose, and Dr. Edward C. Carter (D.D.S.), on the jaw. The last three papers were discussed by Dr. T. E. Carnody and Dr. G. F. Libby. Dr. Finnoff, by the request of Dr. Jackson, demonstrated the method of the reconstruction of eyelids. The outlines of these papers are given below:

Reconstruction of the Eye, Dr. W. C. Finnoff: Queen's Hospital is the facial reconstruction center for the British and Colonial armies. It is located at Sidcup, a small village about twenty miles north of London, and has a capacity of about eight hundred patients. Auxiliary hospitals for patients that are waiting for operation are scattered throughout the kingdom. About five thousand patients in all were under their supervision.

The hospital is subdivided into an English and three colonial subsections or groups. The colonial

units are the Canadian, Australian and New Zealand. The personnel of each section was taken from the respective armies and all invalided troops were sent to their proper sections upon arrival at the hospital. Consequently the English were treated by English surgeons, the Canadians by Canadians, and so on.

When the patient enters the hospital, a complete history is taken, photographs are made of both front and profile, and added to the record. If the wounds are extensive, plaster or wax casts are made, and touched up by an artist to show the exact condition of the wound. In many instances photographs or sketches are made of the various steps of the operation and accompany the history. The majority of these operations are done in several stages and a photograph is taken of the patient after each of them, and frequently casts are made also. When the case is finally completed, photographs and casts are made.

One of the most simple and practical devices used in reconstruction work of the face at this hospital is the so-called Stint Graft or epithelial inlay. The technic is as follows: The scar tissue is dissected from the surface of the wound, and a cast of the wound is made with Stint's dental modeling compound. Strips of skin, similar to those used in a Thiersch graft, are taken from some part of the body and wound smoothly around the dental modeling compound with the external surface innermost, which leaves the cut surface so that it will come in contact with the wound. The cast with its envelope of skin is then placed into the wound and the skin edges are brought over it and sutured. In four or five days the sutures give way and the cast can be removed. The transplanted skin, which has been held in perfect apposition with the surface of the wound, is by this time perfectly healthy and in place. This is of the greatest value in reconstruction of eyelids and is an ideal operation for ectropion. Cartilage is used in many places. About the eye transplanted cartilage is used to fill in depressions of the rim of the orbit or to build up the cavity formed by fractures of the zygoma.

To get the best results in plastic work about the face, it is advised to thoroughly plan the operation beforehand, and never under any circumstances to operate until the wound is absolutely free from pus. It is claimed that most bad results are due to a disregard of these rules.

Reconstruction of the Nose, Dr. William M. Bane: To give an idea of the beautiful work done at Sidcup in facial reconstruction of the nose, which has there reached a high state of perfection, Dr. Bane gave the description of an operation performed by Major Gilles. Major Gilles does nothing in the way of reconstruction of the face until the original wounds have healed and all signs of infection have been absent for some time. He has also learned from experience not to attempt to do too much at one time. Often his patients have undergone as many as six operations, with several months intervening, before the work is completed. The operation which Dr. Bane reported was done on a soldier who had lost completely the lower two-thirds of his nose, including all the skin and cartilaginous framework. At a previous operation, a long, narrow piece of costal cartilage had been implanted subcutaneously over the bridge of the nose, extending onto the forehead for a short distance. He now dissected loose a rather wide oblong flap of skin and subcutaneous tissue containing the cartilage. This he turned down to form the tip of the nose, with the skin surface turned in to form a lining for the nasal passage. (It has been found that it is most

satisfactory to line the buccal and nasal cavities with skin where the mucous membranes have been destroyed.) Support for the tip of the nose was obtained by two narrow cartilage strips which rested laterally on the maxillae, and were held together at the tip by one or two stitches. These also substituted for the missing alar cartilages.

When the edges of the flap had been carefully stitched in place, the whole of the denuded surface was covered with a piece of heavy tinfoil, and a pattern the exact size and shape of this area made. The pattern was then placed upon the forehead and a flap the exact duplicate of the pattern was removed from the forehead and scalp, great care being taken to include the frontal and supraorbital arteries in the pedicle. The flap was then twisted on its pedicle, adjusted to its new position, and the skin edges sutured to the skin edges around the whole irregular circumference. The two ends of the flap came together to form a middle partition.

By undermining the scalp for a considerable distance in all directions, the edges of the wound in the forehead can be approximated in most cases.

Reconstruction of the Jaw, Dr. Edward C. Carter: I want to describe a few ways whereby the dentist aided the surgeon in reconstruction of facial deformities.

To begin with, there were no cases of simple jaw fracture treated at Sidcup, the more simple cases being treated at another institution, consequently no cases were for the dentist to treat independently, and to obtain the best results co-operation between the surgeon and dentist was imperative.

The appliances were made of metal wherever possible. Some of these were for permanent use as in a case where a patient had lost bony tissue in the region of the symphysis of the mandible. The wound of the lip and chin was corrected, leaving very little scar. In his mouth was placed a hinged lower denture, which held the lateral halves of the mandible in proper occlusion and which was so efficient for mastication that he preferred no further operative procedure; but for the most part appliances were temporary, such as splints, jack-screw, and traction screw appliances, to reduce fracture or stretch cicatrices. Some very complicated devices were constructed, as one to supply an artificial chin and floor of the mouth, for a soldier awaiting operation. The chin was made of clay, shaped and painted to afford natural appearance, and held in position by brass bars imbedded in the clay and fitting into tubes on the upper molars. The floor of the mouth was a vellum rubber, valve-like arrangement fastened to the base of the clay and fitting the remaining tissues of the floor of the mouth. A tube through the clay, connecting to a bottle in the pocket, drained off the saliva.

In severely comminuted fractures the policy was never to remove the minute bone fragments from the tissues, even though they were bathed in pus and appeared to be foci of infection themselves, but rather to protect them and immobilize them where possible. This practice prevented the necessity of bone grafts in many cases, as the small fragments retained their vitality and aided in the regenerative process.

A very ingenious device was constructed for a man who had lost most of the maxilla and a considerable part of its supporting structures—fortunately, however, there did remain the two maxillary tuberosities, supporting both third molars. They were used as abutments for a vulcanite appliance made in five separate parts, the fifth part

being the key and locking the whole in position. It supplied an alveolar ridge and a palate, and supported the sunken tissues of the cheeks and nose. The patient could eat soft foods but to masticate solids it was necessary to add a device whereby the supraorbital ridges were used to relieve pressure on the third molars. Vulcanite pads fitting the supraorbital ridge on both sides were attached to heavy brass bars which ran downwards on either side and bent at right angles into the mouth and to which a rigid cast was soldered, so that it fitted the artificial alveolar ridge. The appliance was then soldered to heavy spectacle frames and held in position in that way. It proved to be efficient and was removed easily when the meals were completed.

Before patients were dismissed they were supplied with dentures to suit their cases. The time and expense were not considered, but the patient in each case was given the best possible jaws and teeth.

So, these few examples may convey some idea of how the dentist aided the great work of reconstruction in severe jaw injuries.

MARY R. STRATTON, Reporter.

Major René Sands, who was in Denver the latter part of May in connection with the work of the Belgian commission now in this country studying reconstruction work, child welfare, etc., gave an entertaining talk to the members of the **Medical Society of the City and County of Denver** at a luncheon held at the Savoy Hotel. Among the interesting statements made by Dr. Sands were the following:

During the German occupation of Belgium, because of the lack of food the average school boy lost three pounds in weight, and the average school girl seven pounds. Children were one year back in development.

The great need of remedying the miserable conditions was the cause of a spontaneous organization of municipalities and communities for the purpose of meeting the child problem and other public health exigencies of the war. The result was that public health organization in Belgium under German occupation assumed more importance and greater efficiency than it had ever had. Major Sands here made it plain that while this was indirectly due to German occupation, it was not due to German supervision or German administration, but was rather a response to adverse conditions imposed by the Germans.

The Belgian parliament has organized a national children's bureau, free from red tape, and a babies' clinic has been established in every city.

The cost of living in Belgium has increased one thousand percent.

A national medical service has been established through which one-third of the population (this being the number whose incomes are below a fixed amount) are entitled to free medical service from any doctor chosen. It is optional with a doctor whether he serves in a given case. Remuneration is furnished by a national committee. The service also includes hospital care and operations. Because of the low rates, the doctors are not very enthusiastic about the arrangement.

The Major's two main points, which he emphasized whole-heartedly, were, first, that in the future the physician's province and that of sociology must be more closely welded and that in this connection sociologic medicine should be made a part of the curriculum of medical schools, and that it should be a settled science with text books, etc.; second, that the practice of medicine by the unit or group method is the ideal way, that the

advantages of such a system cannot be questioned, and that it is bound to come. He thinks that the returning soldiers who have learned the advantages of complete routine examinations in all departments of medicine under one group, will demand the same thing in civil life.

EL PASO COUNTY.

The regular monthly meeting of the **El Paso County Medical Society** was held at the Myron Stratton Home, May 14, 1919.

The members were the guests of Dr. Brady, superintendent of the Home, and the trustees of the Home. The doctors were shown through the institution, and then were served an excellent dinner by the young girls of the Home. Fifty doctors enjoyed the hospitality of Dr. Brady and the trustees.

After the dinner Dr. Brady read an interesting paper entitled, "The Care of Neurotic Children".

Discussed by Drs. Vanderhoof, Boyd, Rutledge and McConnell.

C. E. RICHMOND, Secretary.

LARIMER COUNTY.

The regular meeting of the **Larimer County Medical Society** was held in the Y. M. C. A. rooms at 8 o'clock p.m., Dr. Brownell presiding. The names of Drs. E. I. Raymond of Wellington and H. J. Smith of Fort Collins were presented for membership and, their applications being favorably acted upon by the board of censors, they were unanimously elected members of the society. The principal feature of the program for the evening was a lecture on Medical Licensure by Dr. David A. Strickler of Denver, secretary of the state board of medical examiners. Dr. Strickler gave a very clear and concise synopsis of medical legislation from its inception in Colorado up to the present time. He called attention to the difficulties surrounding the work and the obstacles placed in the way of raising the educational and professional requirements of those seeking licenses in this state. The lecture was a masterly production and reflected great credit on its author. The subject was then thrown open for discussion and its various phases were discussed by the following doctors: Spencer, Gilbert and Green of Boulder; McHugh, Quick and Gooding of Fort Collins; McFadden of Loveland. Dr. Brownell presided with judgment and tact and aroused interest and enthusiasm in the subject under discussion. At the close of the meeting the society and its guests adjourned to the dining room, where an appetizing banquet was spread. The following were seated at the table: Drs. Spencer, Gilbert, Reed and Green of Boulder; McCarty and Hardesty of Berthoud; McFadden, Joslin, Yates and Wyckoff of Loveland; Raymond of Wellington; Kickland, Morrill, Winslow, McHugh, Scott, Brownell, Stuver, Halley, Gleason, Morrish, Gooding, Taylor, Wilkins and Smith of Fort Collins; and the orator of the evening, Dr. David A. Strickler of Denver. From every aspect the meeting was one of the most enjoyable and successful ever held in the county.

E. STUVER, Secretary.

PUEBLO COUNTY.

On Tuesday evening, May 6th, following a sumptuous dinner at the Congress Hotel, the **Pueblo County Medical Society** held its regular meeting, with Dr. H. M. Thompson in the chair.

During the regular order of business resolutions were passed expressing the sympathy of the

Society at the loss by death of Dr. Frank Finney, father of Dr. Royal Finney; of Mrs. Marmaduke, wife of Dr. C. V. Marmaduke; and of Mrs. C. Hopkins, daughter of Dr. Fugard. Copies of these resolutions were sent to the respective families and to Colorado Medicine. An amendment to the by-laws was carried, reading that the regular meetings of the Pueblo County Medical Society shall be held the first Tuesday of each month, except in July and August.

Doctors Dunlop, Twyford and Price were appointed as a committee to take charge of the baby contest during the Colorado state fair, to be held in Pueblo in September.

The scientific program of the evening was devoted to reports of cases. Dr. Robe reported a case of acute dilatation of the uterus in a primipara, eight days after normal delivery. Dr. Hoag reported a case of abscess of the spleen. Dr. Senner reported a case of intestinal obstruction occurring a few days after operation on the uterus. All the cases reported evoked considerable discussion by those present.

B. M. STEINBERG, Reporter.

PUEBLO CLINICAL AND PATHOLOGICAL.

The Pueblo Clinical and Pathological Society held its regular monthly meeting at the Congress Hotel, April 9th. Dr. Wilbur Lucas, the president, presided. After the usual dinner, cases were reported and discussed, notes of which follow:

Dr. F. E. Wallace: Two Primary Carcinomata of the Maxillary Antrum.

Case History: Male, aged fifty-five. First examined October 24th. Small red swelling over the right antrum. Slight gland enlargement, no pain, right nasal polypi, meager discharge; operated; removed polypi, middle turbinate, and antral wall underneath inferior turbinate. Bleeding profuse, no pus in antrum. Patient refused Wassermann test. Opening under lip into tumor revealed some pus. No improvement. Refused microscopical examination for several weeks, not until cheek was badly swollen. Lesion proved carcinomatous. Eye became involved and vision was lost. Died February 25th.

Case History: Female, aged seventy-six. Appeared with tumor over left maxilla. First noticed six or eight weeks before examination. No pain, no nasal or eye involvement. Glands involved slightly. Operated, removed anterior and internal nasal wall, lachrymal bone, ethmoid labyrinth and orbital floor. Growth did not fill antrum. Bleeding profuse, wound healed quickly. Six months later, reappearance. Died one month later.

Only one text book out of the five examined mentioned carcinoma of the maxillary antrum. These cases must be rare, as literature mentions but few. One year-book does not abstract or mention a case in seven years. Most of the cases are mentioned as involving the antrum secondarily, few primarily. Diagnosis positive only by microscope; to be differentiated from sarcoma, granuloma, syphilis, etc. Blood examination will aid. The most radical operation should be done. X-ray or radium should be used before and after operation. Insufficient exposures of either, like insufficient surgery, stimulates the growth. Mixed toxins are mentioned as being successfully used in treatment. These two cases believed to be primary.

Discussed by Drs. H. A. Black, F. M. Heller, J. J. Pattee, R. H. Finney and C. W. Maynard.

Dr. H. A. LaMoure: Three cases of Huntington's Chorea. Two sisters and a brother. Family history showed that the mother and a mater-

nal uncle had died of the same trouble. There were seven children, six of whom were afflicted. Four of these have died. One son apparently normal. Disease appeared in mother at age of thirty-five, thirty-seven, thirty-seven, thirty-seven and thirty-two. Mental symptoms slight. Irritability and depression most pronounced, no delusions. Of the two cases still living, one is still able to do some work, but gait is becoming quite unsteady; the other cannot walk or use the upper extremities to any extent.

Discussed by Drs. F. M. Heller, R. H. Finney, W. T. H. Baker, H. M. Thompson and C. W. Thompson.

Dr. R. H. Finney: Serum Sickness Associated with Hysteria After the Administration of Tetanus Antitoxin. A nurse, twenty-seven years old, with past history negative except for several abdominal operations for appendicitis and adhesions. There has been some suspicion of tuberculosis, but nothing positive has been demonstrated in the lungs. Wound in heel resulted from stepping on a safety razor blade. Eight hours following accident, she was given fifteen hundred units of tetanus antitoxin as a prophylactic measure. Four hours later an urticarial rash developed, with intense itching, slight temperature and much nervousness. Eight hours after administration of the antitoxin, the condition of serum sickness or an anaphylaxis resulted in marked stiffness of throat and neck muscles, soon followed by an apparent complete lockjaw. The patient, being a nurse, had seen a few cases of typical tetanus with death. She was slightly neurotic and anticipated more than the ordinary patient would. Forty-eight hours after administration of the antitoxin, the temperature rose to 104° and the condition became quite alarming. A true lockjaw was considered, but practically ruled out because of the suddenness of onset after injury. Administration of adrenalin chlorid hypodermically, and other stimulants had no effect. Contraction of the jaw muscles continued for five or six days. Meningitis was readily excluded. Serum sickness was evident and a strong suspicion of hysteria considered. Dr. C. W. Thompson was called into consultation and verified the diagnosis of hysteria associated with the anaphylaxis. After the first four or five days of constant attention, the patient was told she would be well in another few days. Doctors and nurses gave her less attention, and no sympathy, but joked about her condition rather than considered it serious. She promptly recovered. Following the case report, a detailed table made out by Hiss concerning anaphylactic shock and serum sickness was given.

Discussed by Drs. D. E. Hoag, H. A. LaMoure, and Wilbur Lucas.

Dr. F. M. Heller spoke on recent observations in the treatment of syphilis. The clinical course of syphilis, although theoretically divided into stages and intermediate periods, is full of surprises and irregular occurrences. Symptoms may be absent during the regular course of the disease or they may appear out of time. After citing four cases the speaker said that the treatment of syphilis is seldom successful. Patients with this disease are unwilling to carry on a prolonged course of therapy and physicians seldom are able to carry out a systematic, scientific and planned course of treatment. Specific medication aims to control promptly the symptoms and to eradicate the specific virus from the system. There are two schools of the therapeutics of this disease. One holds to the moderate and prolonged use of arsenic and mercurials and the other to

the intensive form of therapy. A recent monograph from a large clinic in America disposes of this question of which form of treatment is the more successful. The intensive form seems more logical. "Rapid fire" use of salvarsan, maximum doses, five day intervals, controlled by urinary findings and reaction, large doses of the iodides before and while under salvarsan, are ideal from a symptomatic standpoint. Mercurials used intramuscularly, biweekly, intravenously, by mercurialization of the blood serum, and inunctions in large doses over six or eight weeks, have fully the best spirocheticidal properties. After resting the patient one month, a Wassermann test should be made. The value of the provocative test should not be forgotten in this, as well as in all tertiary cases. The use of moderate dosage, over a limited time, of sodium cacodylate or mercurials, or of iodine without specific therapy, should be discouraged. Sodium cacodylate employed once or twice per week, while no doubt promoting a tonic effect, merely increases the tolerance the spirochetes may have to a more positive arsenical spirocheticide.

HENRY M. THOMPSON,
Reporter.

Resolutions on the Death of Dr. Frank Finney of La Junta.

Whereas, It has pleased the Almighty to take Dr. Frank Finney, a highly esteemed fellow worker and father of a member of this society;

Therefore, It is resolved by **The Pueblo County Medical Association** that we deplore the loss of this loved one, and we extend to the sorrowing family and friends our most sincere sympathy in their bereavement. It is further resolved that these resolutions be spread upon The Pueblo County Medical Association records, and that a copy be sent to Dr. R. H. Finney, and one to Colorado Medicine.

H. M. THOMPSON,
W. P. HUNNICUTT,
JOSEPHINE DUNLOP,
Committee.

Resolutions on the Death of Mrs. C. V. Marmaduke.

Whereas, It has pleased the Almighty to remove from the home of one of our esteemed members, Dr. C. V. Marmaduke, his loving wife, leaving her husband and three sons to mourn her loss:

Therefore, It is resolved by **The Pueblo County Medical Association**, that we deplore the loss of this loved one, and we extend to the sorrowing family and friends our most sincere sympathy in their bereavement.

It is further resolved that these resolutions be spread upon The Pueblo County Medical Association records, and that a copy be sent to Dr. C. V. Marmaduke, and one to Colorado Medicine.

H. M. THOMPSON,
W. P. HUNNICUTT,
JOSEPHINE DUNLOP,
Committee.

Resolutions on the Death of Mrs. Esther Hopkins.

Whereas, It has pleased the Almighty to visit with sorrow the home of Dr. Fugard, an esteemed member of this society, and take a beloved daughter from its midst:

Therefore, It is resolved by **The Pueblo County Medical Association** that we deplore the loss of this loved one, and we extend to the sorrowing family and friends our most sincere sympathy in their bereavement.

It is further resolved, that these resolutions be spread upon The Pueblo County Medical Association records, and that a copy be sent to Dr. Fugard, and one to Colorado Medicine.

H. M. THOMPSON,
W. P. HUNNICUTT,
JOSEPHINE DUNLOP,
Committee.

Book Reviews

Surgical Treatment. A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By James Peter Warbasse, M.D., Formerly Attending Surgeon to the Methodist Episcopal Hospital, Brooklyn, New York. In three large octavo volumes, and separate desk index volume. Volume II contains 829 pages with 761 illustrations. Philadelphia and London: W. B. Saunders Company. 1918. Per set (three volumes and the index volume), cloth, \$30.

This is a three-volume work of which two volumes are at present available, and is a contribution of considerable magnitude emanating from the pen of a single individual. It is dedicated to the interest of the surgical patient and not to any special feature of the art. It is frankly stated that some operative procedures should not be attempted by others than those who have special qualifications. Only those whose qualifications give the greatest assurance of success are warranted in attempting operations.

The volumes are particularly valuable to the great class of average surgeons. It is these men that the author desires most strongly to reach and to stimulate in the solution of their varied and everyday difficulties.

The mass of detail in the preparation and management of the operating room and the care of the appurtenances thereto are of inestimable value to all of the many smaller hospitals remote from larger surgical centers.

The care of the surgically ill is most thoroughly discussed. Emphasis is properly laid on the fact that the surgeon must not only apply himself with all the science and art at his command to the specific ailment of the patient, but also must consider the individual as a whole. Complete surgical success is not attained by any procedure, however brilliant, which leaves the patient a physical wreck.

Newer and still unproven methods are not given precedence over those that have been long tried and proven of greatest value. The author lays no claim to originality of procedures. He does claim to have culled from the literature and from other sources that which in his long years of vast experience has given the most satisfactory results in his own work. Many will therefore not entirely agree with him in some of his methods. It is none the less a wonderful one man's work and commands an important place in every general surgeon's library.

The work's chief object is to teach the general principles and the fundamentals of surgery rather than the unusual, the exceptional and the highly specialized, hence it will not appeal to the specialist in the various branches of surgery, but it is a splendid effort and will be greatly appreciated by him whom it is designed to help—the average surgeon.

C. F. H.

The Soldier's Heart and the Effort Syndrome; by Thomas Lewis, M.D., F.R.C.P., D.Sc.; Physician of the Staff of the Medical Research Committee; Consulting Physician in Diseases of the Heart, Eastern Command; Assistant Physician and Lecturer in Cardiac Pathology, University College Hospital, London. 144 pages. Published by Paul B. Hoeber, New York, 1919. Price, \$2.25.

It is a far cry from the American civil war to the world war that still reverberates. It is more than half a century since the observant genius of Dr. Da Costa first recognized and synthesized the symptoms of a functional complex resulting from muscular overactivity under the caption of "The Irritable Heart of Soldiers".

Within that period medical literature contains an occasional historical reference to the subject but, as far as the reviewer knows, it is barren of any original study of the syndrome. Indeed, in the early literature it is especially stated that the disorder excited attention less from its frequency than from the peculiar association of debilitating symptoms.

But in all armies of the recent war cardiovascular inefficiency was a prime cause of unfitness of recruits for active duty and, curiously enough, in the great majority of cases the pathological failure was due to a functional dyscrasia and not to heart disease at all.

In the little volume under review we have the subject treated by one who is perhaps the foremost living exponent of cardiovascular knowledge; one versed in all the instrumental and clinical methods of investigation; and possessed of rare scientific judgment and of a character seeking only truth, and courage equal to conviction. In the recent abundant American periodical literature, the "irritable heart" is commonly discussed under the descriptive term "Neuro-cardiac-asthenia". In the British Medical Board the condition was classified as "Disordered Action of the Heart" (V. D. H.). Lewis prefers to indicate the exciting cause of the disorder in his terminology and calls the symptom complex "The Effort Syndrome". The disorder is developed in response to physical or mental stress and its outstanding symptoms may include breathlessness, tachycardia, palpitation, giddiness, fatigue, pericardial pain, cold and cyanosed extremities, fainting. The importance of this cause of disability in the British army is witnessed by the fact that of seventy thousand soldiers returned to observation posts for cardiac trouble, approximately only one in ten had actual or structural heart disease; the rest were victims of the "Effort Syndrome".

About fifty-seven percent of the subjects of functional disorder were recruited from those of sedentary or light occupation. Lewis writes: "The dominant etiological factor in the clinical histories of soldiers complaining of the 'effort syndrome' is infection of one kind or another." The American student will be astounded when he sees that in the table representing the infective etiologies of the disorder tuberculosis is not mentioned. It is also noteworthy that hyperthyroidism, at least as causing symptoms leading to suspicion of Grave's disease, is given a very insignificant place in the etiology.

The treatment of "effort syndrome" is practically important and of restorative value. Bed rest is distinctly bad, treatment by drugs is ineffectual, graduated exercises, as by company drills of increasing severity, are the proven means of rehabilitation. Under careful treatment "about fifty percent (of cases) may be rendered fit for full or

light duty, while fifty percent should remain in the sedentary class to be discharged as unfit".

The reader will naturally ask, why should it require a disastrous war to bring to the fore such an important disease condition as has been discussed? The answer is that the basic elements for the "effort syndrome" are everywhere present in civil life and undoubtedly cast their shadow over many fields of functional efficiency. The subjects of the disorder can be recognized by appropriate methods, but the routine of medical examination must be radically modified for their detection.

The "effort syndrome" is well worth the study of all clinicians. It makes a great step in advance on our way from the anatomical to the physiological viewpoint of disease. The important thing for the patient is to preserve his sense of well-being and his efficiency in execution as long as possible. The important thing for the doctor is to apprehend the energy of the vital functions and to estimate their ability to respond to stress and to coordinate with one another in the work of the whole machine.

H. S.

The May issue of the **Journal of the Michigan State Medical Society** is very unusual and deserves especial comment. It is called Victory Number. Inside its two beautiful, colored, cover pages are some eighty-three pages, showing photographs of three hundred and twenty-three members of the Michigan State Society who have seen service in the medical corps of the army. Beginning with the official program for the annual meeting of the society held in May, there follow short biographies of Major-General William Ireland, Rear Admiral William Clarence Braisted, Surgeon General Rupert Blue; then the long series of photographs of army men and of past presidents of the society, a list of state medical officers, a list of the hospitals of Michigan, with illustrations, and an honor roll. This is an unusually creditable issue of a state medical journal.

SCIENTIFIC RESEARCH FUND APPROPRIATIONS.

The United States Interdepartmental Social Hygiene Board, through its executive secretary, Dr. T. A. Storey, 1800 Virginia Avenue, N. W., Washington, D. C., announces the following appropriations from the Scientific Research Fund of the board:

Leland Stanford Junior University Medical School

- (1) "Investigation into more effective treatment in acute and chronic gonorrhea," under the direction of H. L. Rigden, M. D., Clinical Professor of Genito-Urinary Surgery, and A. B. Spalding, M. D., Professor of Obstetrics and Gynecology....\$2,300
- (2) "The permeability of the meninges to anti-syphilitic drugs—an attempt to increase their permeability," under the direction of H. G. Mehrtens, M. D., Clinical Professor of Neurology\$2,300
- (3) "Investigation into more effective methods of treating syphilis," under the direction of H. E. Alderson, M. D., Clinical Professor of Dermatology.....\$2,600

Total\$7,200
University of Michigan, College of Medicine and Surgery

- (1) "A research for an improved method of demonstrating the spirochaeta pallida in human tissues," under the direction of A. S. Warthin, M. D., Professor of Pathology\$6,000

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Editorial Comment

THE VICTORY MEETING.

The seventieth annual session of the American Medical Association occurred in Atlantic City, N. J., June 9-13, receiving a fitting war-like touch in that it was termed the "Victory Meeting."

The usual entertainment features of Atlantic City were provided, including fish-net hauls, receptions to the visiting ladies, etc. With the delightful, cool breezes usually present, the surf, the sands and the board-walk seemed to offer the stronger attraction for the greater number.

The registration was over four thousand eight hundred, Colorado being represented by a delegation of forty, notwithstanding the absence of reduced railroad rates. No reduction in fares having been granted from points west of Chicago, the attendance from the western states was unfortunately limited.

Foreign guests to the number of eighty-eight were registered, representing nineteen nations; Canada, England, Belgium, Cuba, China and France were well represented.

The opening meeting was held on the evening of Tuesday, June 10, in the music hall of the Steel pier when the addresses of welcome by Mayor Bacharach of Atlantic City, Dr. Thomas Harvey, president of the New Jersey Medical Society, and Governor W. E. Edge, of New Jersey, were followed by the introduction and installation of the president-elect, Alexander Lambert of New York, who formally addressed the meeting.

A victory meeting was held on Wednesday morning and a second on Thursday evening in which ten-minute speeches more

or less related to medical war subjects were made. "Medical Veterans of the World War" was the subject of the remarks by Dr. Hubert Work, of Pueblo.

The section programs were full of interest and the endeavor made to so alternate meetings as to permit a wider attendance from one section to another. To those interested in the work of one section this was a distinct disappointment, as was the delay of the opening session in six of the sections until 2 p. m. of Wednesday. Likewise, the omission of an afternoon session in the midst of the program had the effect of detracting from the interest in the later features of the meeting.

Military experiences entered into the programs of all sections to an enjoyable degree.

The scientific exhibits were unusually attractive, especially those of the army and navy of the U. S. government. Awards were made, in recognition of individual effort, to Dr. H. S. Warthin, Hideyo Noguchi, the Mayo Clinic, and Dr. J. Shelton Horsley.

To the local committee, with Dr. Emery Marvel, chairman, is due the credit for the arrangements.

At the election of officers for the ensuing year Admiral William C. Braisted was chosen president-elect.

The next session will be held in New Orleans, Louisiana, at a somewhat earlier date than is usual in order to avoid the probable heat of the early summer.

G. A. M.

THE BLIND.

Most of us have said, at one time or another, "I would rather be dead than blind".

Such a statement expresses the popular realization of the truth that no other physical disability is altogether comparable in magnitude with the loss of sight.

The blind man stands apart from the seeing world. Cheerful he may appear to be, yet his attitude is necessarily rather that of resignation than happiness. If he has once seen and has lived a life of relative independence in labor and enjoyment, his greatest deprivation is probably not so much the loss of visual sensation, terrible as this loss may be, but rather the inability to care for and provide for himself, the sense of helplessness and of dependency upon others at every turn.

The actual number of the blind in the United States in 1910 was around seventy thousand. Of the blind males over ten years of age less than ten and a half per cent were self-supporting, and nearly four-fifths of these were able to earn less than an average of five hundred dollars per annum each, while more than one-half of them averaged less than two hundred dollars per annum. About one-half of the total number of blind, however, were over fifty-nine years of age.

It is perhaps impossible to make the majority of blind persons, even in the more active decades of life, entirely self-supporting. There undoubtedly rests upon the whole community the duty of providing for these unfortunates. But from a purely selfish point of view, the expenses of this maintenance may be reduced by a proper system of training for the blind; and, from the loftier outlook of humanitarianism, we must remember that, all jibes notwithstanding, work is a necessity for everyone, and that the blind man or woman can be kept cheerful only by a proper alternation of useful and recreational activity.

The war has brought home to us painfully but hopefully the fact that the man who becomes blind needs to be reeducated. His previous knowledge of the world is inadequate for the new emergency. Left to himself, he lapses into apathy and slothfulness. Properly encouraged and directed, he may be made a shining example of the triumph of the human mind over the adversities of fate. Unfortunately, a very large percent-

age of the blind are still left without proper educational care, although the United States census report informs us that more than one-half of the males who had attended a special institution for the blind reported a gainful occupation.

It is only eighty-seven years since the first school for the blind was established in the United States. Although such schools are now widely distributed, a number of important problems relating to them still await solution. In the first place the education of the blind has been dealt with primarily rather as a matter of so-called charity than from an industrial and educational point of view. A great number of blind schools are still governed by boards of charity rather than by educational authorities. To parallel the partly humanitarian, partly economic, tendency to pension the blind, we should apply to them, alike in childhood and in the earlier decades of adult life, the principle of compulsory education so generally accepted for the seeing.

The principal basis for these comments is a work on "The Blind, Their Condition and the Work Being Done for Them in the United States," by Harry Best.* Probably nothing so thorough on the subject has ever issued from the public press. Its object is to examine the blind and their estate from the point of view of the social economist rather than from a purely sentimental standpoint. Into a volume of seven hundred and sixty-three pages the author has crowded, mostly in very readable form, an exhaustive survey of every aspect of this broad field, humanitarian, legal, preventive, educational, industrial, and legislative.

W. H. C.

PERSONAL HYGIENE VERSUS SANITATION.

The new policy in the promotion of public health appears to be that of keeping people well through personal hygiene—putting the body in the best possible condition to resist infection, while the methods of the past, general sanitation and quarantine, were directed against the sources of infection. One by one

*New York, The Macmillan Company, 1919.

our theories are evolved, practiced enthusiastically, perhaps in some instances relied upon with excessive credulity, then discarded. The same impulsiveness which urges us to take up new ideas is in evidence when we later discard them. Hankering for the new and becoming tired of the old no doubt are important factors of progress, but if they are not checked by judgment and patience, they may become dangerous.

The spectacular success obtained in stamping out such communicable diseases as malaria and yellow fever surely should not be minimized and unquestionably there should be no let up in pursuing a policy which has accomplished the ultimate good that sanitation has; and no doubt there is no intention whatever to neglect this in the future, yet the enthusiasm in the new movement is apt to detract from efficiency in prosecution of the old, the latter falling into the category the old, the latter falling into the category

This impulsive oscillation in medical ideas, which is an expression of uncertainty as well as restlessness, is so proverbial that it has received a title in the metaphorical phrase, "the swing of the pendulum." It is to be hoped the pendulum, in swinging toward physiologic resistance, will not move too far from general sanitation and that deliberation will not give way to impulse in a matter of such great import.

TREATMENT FOR THE DOCTOR.

It seems a rational belief that if a given human organism is materially perfect it will function perfectly. Therefore, it is held by many doctors that when a patient presents chronic symptoms of "neurasthenia" there is an organic pathologic basis for them, else he would have held up under mental or physical strain or have reacted normally from any exhaustion incident to it.

This is probably true in a certain number of cases in which the correction of organic malconditions or of physically injurious habits has performed a cure. But there are many people having the same or like physical defects or habits who do not have the mental or nervous exhaustion symptoms, and this fact would argue the existence in the cases presenting them of a primary ner-

vous or mental factor which as yet, at least, has not been shown to depend upon central nervous pathology. And no one can say the psychic effect of "having an operation" may not have been a considerable element in some of the cures effected by surgical means.

The bad effect upon the body of uninteresting routine, heavy responsibilities, domestic infelicity, financial embarrassment, material losses, unsatisfied impulses, or any great disappointment, is, in fact, well recognized.

The cure should be directed at the cause, as in physical pathology, and attempts to "brace up the patient," either by drugs or by psychic therapy, are merely treatment by stimulation, while rest, if it can be secured, offers regeneration of nerve force to a certain extent. Who of us has not experienced a feeling of rejuvenation when difficulties were overcome, or when good news about a doubtful issue was received?

"Success" and "good news" aim at the cause, but it is beyond the physician's power regularly to furnish these, hence the next best thing often is to have the patient run away from trouble.

The doctor himself is an example of a class which, because of continued responsibilities, often is subject to nervous exhaustion. Rest is his necessity. The best way to get it in his case is by diversion. Summer is here and the mountains are near at hand, offering scenes and pursuits which invite interest; and interest in outside matters crowds responsibilities aside. Why should he not, then, take his own medicine and go on a vacation? The specialist has no valid excuse, for he can arrange his time rather easily. The general practitioner, however, must often experience disappointment after having set a time for going, and when he does succeed in making his get-away, may suffer considerable financial loss, but, duty to his patients not preventing, he should consider the money loss a contribution to his future efficiency rather than a sacrifice; and if the treatment cannot be taken in one large dose, a sort of *therapia sterilisans magna*, it can be taken in repeated small doses.

The army men who have returned tell of

the marked transformation brought about by hygienic regime in men who, on entering service, were despondent "neurasthenics," but the freedom from care and home troubles and the diversion of an interesting, new occupation should not be lost sight of as being a part of the cure. This should constitute an object lesson to those of us who suffer the symptoms either of too much responsibility or of what is equally as frequent a cause of neurasthenia, too little responsibility; and we shall look to the returned soldiers of the medical corps to set us an example this summer in the art of keeping energetic.

Original Articles

SEMINAL VESICULITIS: ITS TREATMENT.*

WILLIAM M. SPITZER, M.D., DENVER.

Two years ago I had the honor of addressing this society on the subject of seminal vesiculitis. The address was devoted to the pathology of this condition, its symptomatology, and the possibilities and probabilities of complications and sequellae, and practically no thought was given to its treatment. This, for the reason that the treatment had not settled to a routine. It has not become any more settled, as far as the literature shows, but many men in many parts of the world are gradually determining methods of treatment, and as time goes by we shall no doubt hear from them on this subject. Before the close of this essay an attempt will be made to concretely state the modes of treatment employed by the author at the present time. In the past two years much has been done to make this treatment more specific.

The frequency of seminal vesiculitis is appalling, and it may well be said that of one hundred patients suffering from sexual troubles, at least ninety have the condition in some stage. It must be remembered that infections of the sexual organs, or of the urinary tract, may be due to any organism which can cause infection elsewhere in the

body. This is said because of the popular opinion that the gonococcus is responsible for all these infections; and this is at times an injustice to the patient.

If I may be permitted again to call attention to the results of this condition, its importance will become more apparent.

Locally it may cause all the symptoms of a cystitis with its resultant miseries. It may result in an abscess of the vesicle with high temperature, prolonged prostration, and eventual death, simulating typhoid fever in its course. Peritonitis occasionally, but rarely, ensues from a rupture of such abscess into the peritoneal cavity. Colic, simulating renal colic, may appear, and the presence of pus in the urine at some time complicates the picture still more. Various ejaculatory disturbances, such as premature ejaculation, bloody ejaculation, painful ejaculation, or absence of ejaculation at the termination of coitus, exist. Dysuria, pollakiuria, inability to urinate and other urinary disturbances may add to the symptoms. Various reflex pains, such as suprapubic, perineal, rectal, lumbosacral, sciatic, intra-abdominal (simulating appendicitis) and lumbar pains (simulating renal lesions) are common.

With the vesicle as a focus of infection, any one of many conditions may arise. Very common are various forms of arthritis (such as gonorrheal rheumatism), myocarditis, iritis and even choroiditis; and of course infections in any of the organs may ensue.

It is not to be inferred that all the above symptoms, conditions and complaints attach themselves to any one case of vesiculitis, that disease in fact often being present without either the patient or the physician knowing that any of the sexual or urinary organs are in the least diseased. Again, some of these symptoms can exist only with an acute vesiculitis, whereas others accompany a subacute infection, and still others are present in the extremely chronic condition. No attempt can be made to classify these symptoms, which are so vague and uncertain that the diagnosis can hardly be made from the symptomatology.

How then may the condition be diagnosed? Probably the following five signs

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

are the best to lay down as more or less classic:

1. Pain. An infected seminal vesicle is always painful or tender to the touch.
2. Induration of the walls of the seminal vesicle.
3. Vesicular expression brings forth large ribbon-shaped vesicular casts.
4. Sensitiveness or pain in the region of the verumontanum which is determined by the aid of the olivary bougie.

Those are the four signs given by Luys, to which I would add a fifth very important sign, as follows:

5. After the patient has expelled his urine, and the urethra and bladder are thoroughly washed, so that the washings no longer contain pus, if the bladder be filled with clear water and the vesicle be gently massaged, pus will be found in the water passed from the bladder, provided the ejaculatory ducts are not closed.

The treatment should be divided into three parts, namely: the treatment of acute vesiculitis, subacute vesiculitis and chronic vesiculitis. That this outline of treatment cannot be rigidly adhered to, because of complications which may arise, must be stated at this point.

Generally speaking, an acute vesiculitis is treated by rest in bed with applications of heat to the vesicle through the rectum by means of some instrument designed to carry hot water in and out. The bowels must, of course, be kept open. Cold applications to the lower quadrants of the abdomen and a light diet are also indicated. Either resolution takes place, leaving a chronic condition, or the condition goes on to abscess. This abscess must rupture, either into the urethra, into the rectum, or through the perineum. If, however, rupture does not occur, the temperature remains high and the prostration becomes more extreme, surgical intervention consisting of opening the abscess through the perineum is demanded. In the subacute condition rest alone is called for, until such time as subsidence into a chronic stage with the clearing up of the subacute symptoms ensues.

The chronic stage is the stage in which an attempt should be made to cure the condition, because urethral treatment and strip-

ping of the vesicles is not contraindicated, as it is in the acute and subacute stages. One must digress at this point long enough to call attention to the fact that the semen enters the vesicle by way of the vas deferens and leaves the vesicle by way of the ejaculatory duct, whose opening is in the posterior urethra. It is through this duct that the infection travels from the urethra to the vesicle and thus the duct itself becomes highly inflamed. Having a caliber which is extremely small, this duct becomes occluded in the presence of the inflammation, and the vesicle then cannot empty itself except by way of the vas deferens to the epididymis, in which case epididymitis ensues and drainage in this direction ceases. (It is to be remembered that epididymitis, when present, is always and only a symptom of vesiculitis.) Our cue to the cure lies in this pathology. If we can but open these inflamed ejaculatory ducts, the vesicle will drain itself through the proper channel into the urethra and stripping of the vesicle in the presence of an opened ejaculatory duct will cure the condition, in most cases. This opening of the sealed ejaculatory ducts may be accomplished by (1) reducing the inflammation in the posterior urethra; (2) reducing the inflammation in the verumontanum into which the ejaculatory ducts open, and (3) dilating the ejaculatory ducts.

As both the prostate and the vesicles drain into the posterior urethra, and as the ejaculatory ducts traverse the prostate to open into the verumontanum, and as the seminal vesicles lie between the same layers of fascia as the glandular portion of the prostate, it is evident that none of these organs, namely, the posterior urethra, the verumontanum, which lies in the posterior urethra, the ejaculatory ducts, the prostate, or the vesicles, can be infected without an accompanying infection of them all. When the posterior urethra is inflamed, its mucous membrane is swollen, and when this infection persists, this mucous membrane becomes thickened. Such a condition of affairs existing, the openings of the ejaculatory ducts in the posterior urethra are closed by pressure from without. The cure of this posterior urethritis and of the inflammation of the verumontanum consists, as is well known, of

instillations and dilatations. When such cure is effected, stenosis of the mouths of the ejaculatory ducts is gone and stripping of the vesicles and concomitant massage of the prostate empty these organs of their purulent contents, and they in turn are restored to normal. Naturally during this last process, the posterior urethra must be constantly attended to or the pus pouring from the prostate and vesicles will reinfect it. At times it is necessary to apply direct medication, or even cauterization to the verumontanum itself, to reduce the infection in this sensitive and highly organized little structure.

There remain then a few cases in which the ejaculatory duct has an organic stricture, and in these cases it is sometimes possible to dilate the duct, and sometimes impossible, for the reason that its opening cannot be found, and sometimes impossible for the reason that its canal cannot be followed. However, more success attends this procedure than would be thought possible by those who have not tried. A very large number of these cases of chronic vesiculitis having been cured by the above measures, a residue is left, consisting of perhaps ten percent. These may again be divided into two classes, one of which drains well into the urethra, the infection being of such low grade that no symptoms ensue, or are likely to ensue, the other being one in which the infection persists so strongly that constant reinfection of the urethra takes place despite a period of constant, sane treatment for a year or so. This last class of cases warrants surgical interference.

There is another class of cases which warrants and, in my humble opinion, demands surgical interference. This is made up of the cases in which the seminal vesicle acts as a focus of infection and serious results threaten to follow, such as gonorrheal arthritis, iritis, serious myocarditis and any other diseased condition threatening the life or life-work of the patient.

Within the last three years I have opened and drained continuously over a period of two weeks the vesicles in fifteen patients suffering from gonorrheal arthritis. These were carefully selected cases whose arthritis

promised to be permanent and progressive. In no case had such arthritis existed (always polyarticular) for less than three months, and in each case everything had been done in the way of local treatment and vaccines that was possible, without any effect on the arthritis. I am pleased to report that in each case the arthritis was completely stopped within a few days, all joints being restored to normal within two weeks. The wonderful part of it, to me, is that the improvement in three cases was noticeable within twenty-four hours, and in all cases the improvement was noticeable within three days. Three of these cases had slight joint remissions between the fifth and the eighth days, but these promptly cleared up, the patient being well of all his joint troubles within two weeks. Operations in two other cases in which the vesicles were not opened because of metastasis, but for persistent incurable infection of the vesicle, I am not ready to report.

Washing and instillation of the vesicle as recommended by Belfield have not yielded the results which Belfield and Herbst claim for them, in my hands. As this operation is of much less magnitude than the vesiculotomy, I can but wish for better results in the future than I have had in the past and will not, as yet, discard it; and this, for the reason that I have had a small percentage of excellent results; in fact, cures. There is no doubt in anybody's mind, in these days, that focal infection is responsible for a large number of human ailments. And yet, it is no reason why everybody's teeth should be pulled, or his vesicles opened and drained. If good, honest, conservative medicine is to be practiced, if the physician is to be a credit to himself, his profession, and the community at large, great caution must be used in locating the focus of infection, when we are convinced that the ailment complained of is due to such a focus; else the pendulum will swing the other way and proper surgery will fall into disrepute.

Since the greatest indication for operative interference is gonorrheal arthritis or other metastasis, and since such metastasis is cured by opening and draining the vesicles, vesiculectomy should be performed. Ves-

culectomy, while not a much graver operation, is not in order until more data as to subsequent sterility are obtained. Many of these cases of vesiculitis are sterile as long as the vesiculitis continues. It is not known how many are sterile after vesiculotomy, nor for that matter after vesiculectomy. It is presumed that the ampulla of the vas can act as a reservoir for the spermatozoa, and therefore, if the vesicles be completely removed, sterility does not necessarily ensue. Since, however, the vesiculotomy accomplishes what is required, vesiculectomy is not, as yet, in order. It may be that the surgery of the vesicle will have to go through the various phases that surgery of the gallbladder has passed through.

As to technic, the technic of reaching the vesicle is about the same in all hands. Zuck-erhandl, Proust, Albarran, Young and Squier have in this order contributed toward this common method of entrance. One enters the perineum as for the open method for perineal prostatectomy, a short résumé of which is as follows:

The patient being in the extreme lithotomy position, a skin incision whose convexity is upward is made from one ischial tuberosity to the other, its center being in the mid-line of the perineum about half way between the anus and the scrotal and perineal fold. This incision is carried through both layers of the superficial fascia and the superficial layer of the deep fascia. By blunt dissection the ischio-rectal fossa of each side is opened to the apex of the prostate. With the index and middle fingers of the left hand, one in each of these fossae, those fibers of the sphincter ani muscle which run from the anus to the central tendon of the perineum are divided. Next, with great care, so that the rectum is not entered, the fibers of the recto-urethral muscle are cut with the scissors. When this is accomplished, the rectum can be pushed back from the prostate, to which it was attached. A silk suture through the prostate makes an excellent retractor, and now it is possible to divide the fascia covering the prostate, which is known as the middle layer of Desnonvillier's fascia. This fascia is divided from one side of the prostate to the other, fairly close to the base of the prostate, and

if it be pushed backward and upward the vesicles come into plain sight. It has been the custom to make multiple incisions in the vesicle and the ampulla of the vas deferens, but I vary this by dissecting off the posterior wall of the vesicle and making multiple incisions into the ampulla of the vas on each side. A rubber tube, the size of a No. 14 French catheter, is now sewed into each vesicle with No. 2 chromic gut and it is about twelve days before this comes out. After its removal, the fistula persists for about two weeks making drainage for practically four weeks in all.

Of great importance, but nowhere mentioned in the literature, is the method of closure of the wound. Even though the rectum has not been entered, fecal incontinence may ensue if the levator ani muscle has been damaged. This can be avoided by sewing with two or three interrupted chromic catgut sutures the levator ani muscle of one side to that of the other, as done by Babcock in his perineorrhaphy on the female. Further, one chromic suture should attach the sphincter ani to the central tendon of the perineum. The skin is then closed, dressings adjusted and the patient returned to bed. The bowels are not moved for six days to a week.

930 Metropolitan building.

DISCUSSION.

John B. Davis, Denver: Dr. Spitzer's excellent paper evidences the fact that his views coincide generally with the opinion of the prominent urologists of this country. He opens the question whether inflammation of the seminal vesicles should be treated nonsurgically or by operation. I think there is a pretty well marked line between the two. Some of our urologists, particularly Squier, advocate surgery in cases where we have pus or pain or rheumatism, and others for a neurotic condition, while Cabot reserves for surgery those which have a deforming arthritis. Nonsurgical treatment should be given a thorough trial. No local treatment is applicable to the tuberculous vesicle.

The diagnosis of a vesicle infection is often overlooked. Too much stress is put upon the prostate. Very often the prostate is not markedly involved, and the vesicle is to the contrary greatly infected. We never have a vesicular infection without more or less prostatic involvement. We may have prostatic infection without vesicular involvement.

In the pus cases, and in the inflammatory type of cases that are acute, we have an abscess. If it is a vesicular abscess, it can drain into the posterior urethra, but it cannot rupture into the posterior urethra. If it is a prostatic abscess, and such abscesses do occur, and more frequently than

vesicular abscesses, it can rupture into the urethra. One method of attacking a prostatic abscess is to go into the deep urethra through the perineum and puncture the floor of the urethra into the prostatic abscess, demonstrating clearly that we have a localized abscess and a focus of infection there; but the vesicular abscess is too far removed to rupture directly into the posterior urethra.

The diagnosis of seminal vesiculitis cannot always be made by introducing the finger into the rectum, nor can it be made by examination of the urine, but the microscope is the valuable adjunct to the diagnosis, because we have patients with infected vesicles who can pass a clear urine which, after the stripping down of the vesicles, will show either macroscopic or microscopic pus. Sometimes the cystoscope introduced into the bladder will reveal definite bladder involvement, an inflamed trigone which is sometimes indicative of vesicular infection. If one has a case in which pain is not relieved, in which the pus is not eliminated (and I do not mean the last pus cell) or if there is a recurrence of attacks of epididymitis, or if there are persistent arthritic pains which can be demonstrated to be due to a vesicular infection, I believe surgical intervention is indicated.

There are two points in the technic of the operation which are important. The author laid stress upon the closure or bringing together of the fibers of the levator ani, and also of reuniting the central tendon of the perineum. If we do not do this we will have fistula or poor rectal control.

Dr. Spitzer (closing): The treatment of seminal vesiculitis is simple, as a rule, in that the condition yields to stripping of this organ in ninety percent of the cases. In the remaining ten percent, measures as suggested in the foregoing article must be adopted. I wish to repeat that where the ejaculatory ducts are closed, stripping of the vesicle is useless, until this duct be made patent. If the stenosis be of the duct itself, the duct must be catheterized, whereas if the obstruction be due to inflammation of the posterior urethra, or of the prostatic tissues through which this duct passes, the relief of these conditions will re-establish its patency. It is worth reiterating that recurrent gonorrhea is often due to chronic infection of the seminal vesicle.

I must differ from Dr. Davis in his idea of the cure of seminal vesiculitis. I do not consider these cases cured until the vesicles are free from pus and from micro-organisms as demonstrated by the microscope, and if one wishes, by cultures. And I must differ from him again, in that I believe abscess of the prostate to be comparatively rare, and abscess of the seminal vesicle much more frequent than commonly supposed. This abscess ruptures into the posterior urethra in probably ninety-five cases out of one hundred. Rarely does it rupture into the rectum, and still more rarely by way of the perineum. This is explained by the fact that it is an abscess of the vesicle and not of the prostate, and that the closed ejaculatory duct has opened and permitted the outpouring of pus from the seminal vesicle into the urethra, thus relieving the abscess.

As to arthritis due to a focus of infection somewhere in the body: I do not think it possible to prove in all cases that it is due to seminal vesiculitis, even where this organ is responsible. If, however, there be polyarticularitis, which has appeared in the presence of an acute or subacute or chronic seminal vesiculitis, operation on this organ is indicated if no more active focus can be demonstrated elsewhere. One cannot consist-

ently operate on every case of polyarticularitis, however, because vesiculitis exists. Judgment must be exercised and intelligence shown in doing operative work on these cases, and further, these operative procedures should be resorted to only by those who have well prepared themselves in this field, as well as by those only who are fitted to make an accurate diagnosis: for it must be remembered that while this operative work does not often involve the patient's life, there is much danger of evil results which may make the patient miserable for the remainder of his life, such as a rectal fistula, an urethral fistula, or, most terrible of all, a recto-vesical fistula.

THREE RADICAL DEFICIENCIES IN THE MEDICAL CURRICULUM: CLIMATOLOGY, HYDROLOGY, GYMNASTICS.*

HENRY SEWALL, M.D., DENVER.

From the very earliest days of medical teaching the scope of its subject has embraced two different fields of activity, namely, the diagnosis of disease and its treatment. Indeed, until a recent period, included within the lifetime of many of us, the content of medical science and art practically comprised efforts to recognize and cure disease. But with the birth of bacteriology and the discovery of the living agents of sickness, of their life histories and modes of attack upon the human being, the science of preventive medicine, hygiene, or sanitary science was conceived and has developed so fast that this lusty offspring of the laboratory promises to shoulder out of their niches most of the old gods we have been wont to worship in our temples.

The medical teaching which today does not recognize prophylaxis as the apotheosis of medical practice is unworthy of a place among recognized schools of instruction.

It has been borne in upon me that just ahead of the ground already won in the march of knowledge lies a fallow soil which has, indeed, been viewed from afar, but whose fertility has not been tested by any systematic cultivation; hence the subject of this essay. The medical field of vision so long limited to the contemplation of actual disease was only reluctantly enlarged to embrace certain conditions which could be proved to determine the existence of definite diseases. We are now confronted with

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the question, which the exigencies of war have made imperative, whether medical science and medical teaching do not demand a further extension of the purview of our interests, a study, namely, of the art of keeping people well.

It is obvious that an intimate view of the living body in a state of health demands an accurate knowledge of all physiological processes and of the reaction of the organism to the various agencies of nature, namely, food, and climate, including the physical factors of temperature, humidity, oxygen pressure, sunlight and electric potential. It includes the effects of water applied to the skin and imbibed into the stomach. It includes the evolution of energy in the forms of nervous and muscular activity which, indeed, measure the machine efficiency of the body.

I maintain that this point of view as to the duty of medical teaching has been almost completely neglected in the past. Supposing, on the other hand, that a due proportion of our pedagogic energy had been devoted to dissemination of practical instruction in the laws of health, is it not fair to presume that our army draft boards would find a far larger proportion than at present of candidates fit to serve country and civilization?

When mustered into the service the usefulness of our boys depends upon their machine efficiency, determined by the amount of energy they can develop from active muscle, nerve and gland. Their physical hardships consist of superwork to be done, of cold and heat to be withstood and drenching with cold water. When the organism cannot react to such environment the sure result is inefficiency, disease and failure.

When we look around for a peg upon which to hang the facts and ideas embraced within this field of human interest we can find it within the subject-matter of climatology. One of the foremost experts has defined climate as the "summation of atmospheric conditions as recorded for a long period of time; or in other words, it is the totality of weather; while weather is the physical condition of the atmosphere at a given time, or during a limited period". It

is obvious, to quote from another essay, that these atmospheric conditions are themselves determined by the integration of many diverse factors among the most important of which are the motions of the earth, latitude, altitude, the distribution of land and water, nature of the soil and its surface features, ocean currents and prevailing winds.

That is to say, wherever we are we cannot get away from climate. When we sit in a stuffy office, windows closed and the air reeking with human exhalations, the environment is as truly climatic as when, on a vacation outing, we inhale the free air on the mountain top. The physician who inveighs against a climatic treatment for the consumptive and then puts his patient at rest on a fire escape overlooking the alley, simply lacks perception of the meaning of terms. He is putting his trust in biochemic reactions to adulterated instead of pure climate.

For our purposes the interest and importance of climate depend upon the physiological reactions to meteorological conditions. Obviously, a comprehensive knowledge of physiology must precede an understanding of effects of the meteorologic stimuli which excite them. It is worth while to trace briefly the development of a narrow sector of knowledge to our present point of view. We are today satisfied that there is something about the open air which is salutary for human health. This is a very ancient belief but until clinicians applied it in the treatment of tuberculosis it remained in the limbo of "academic" postulates with which the so-called practical man did not concern himself. Now the mode of life which hedges us in confines us within walls for the greater part of the time, often in apartments crowded with our fellows, the air of which departs radically in chemical and physical composition from the free atmosphere.

I will not expatiate on the evidence for the essential noxiousness of confined air but simply recall the universal experience of morbid sensations, irritability, discomfort, depression that each of us has suffered in a crowded apartment. Scientific investigators a half century ago undertook to find wherein lay the evil influence of confined

and rebreathed air. At first it seemed clear that the increased proportion of carbon dioxide in such air sufficiently explained its noxious character, but further observation speedily overthrew this explanation, so that when Brown-Sequard offered proof that the expired air contained organic poisons the problem seemed finally solved and it was recognized that the art of ventilation had simply the task of removing "foul" and restoring fresh air to the apartment.

But the scientific agnostic would not leave the matter alone and was able to show that Brown-Sequard's methods were inaccurate and his conclusions untrustworthy. Then a succession of physiologists attacked the question afresh and their results are all harmonious in the conclusion that every morbid sensation or diminution of nervous power which one suffers in an unventilated, crowded apartment, even when the conditions are more vile than ever known in common experience,—that all the obviously deleterious attributes of closed air are due simply to a combination of excessive heat with excessive humidity. Seal a person within a box, only seeing to it that the air is kept cool and its humidity low, and he can remain in comfort and pursue intellectual tasks in a normal way while the air which he has breathed over and over again becomes fouled beyond endurance to the senses of an outsider. We have a demonstration, then, that the sensory discomfort felt in a closed space depends upon the physical factors, temperature and humidity. A precipitate conclusion would lead us to infer that the art of ventilation has only the duty of regulating the temperature and humidity of the air by cooling pipes and electric fans, without renewing it. It is obvious that such a conception would upset all our hard won notions of the open air and if put in practice would overturn our methods of living and of building construction. It should be noted that the demonstration of the physiological importance of the physical agents, temperature and humidity, does not disprove at all the possibility of a toxic property in rebreathed air; in fact, experiments conducted over several weeks by the New York State Commission on Ventilation

indicated a physiological deterioration in the absence of ventilation. A little knowledge would indeed be a dangerous thing if we assumed a vital similarity between the open air and that which has been altered by respiration. In fact there is positive evidence that exhalations may be absorbed by and produce characteristic effects on the body, for M. J. Rosenau was able to sensitize guinea pigs to horse serum by exposing them to the smell of horses, and the speaker has desensitized pigs which had been made sensitive to horse serum, by bringing them into a horse stable.

When we inquire into the physiological basis of the discomfort which is occasioned by increased temperature and relative humidity of the environment it is easy to see that what happens under these conditions of confined air is an interference with the normal loss of heat from the skin, leading to a rise of body temperature, for the regulation of which in the warm blooded animal nature has exquisitely coordinated numerous means of keeping constant the ratio between heat production (a chemical process) and heat dissipation (a physical process). When this regulation is overthrown the whole sensorium rises in revolt. As Graham Lusk says, the cells of the tissues can only live and work in a certain tropical temperature, departure from which is the commonest means we have of knowing that something ails the body.

Medical climatology is based on our recently acquired knowledge of metabolism which can be measured for the living body as accurately as can the combustion and work efficiency of an engine. Calorimeters are in use in which a man may live comfortably for days at a time. The heat given off from his body while resting before breakfast measures exactly the amount of combustion necessary to develop the minimal temperature required to keep his cells in functional health. This is called the basal metabolism. If the air about him is warmed, the skin vessels dilate, perspiration is formed and its evaporation, together with radiation from the reddened skin, removes the excess of heat from the body which would otherwise raise its temperature. If the external air is very humid the evapora-

tion of the sweat will be hindered and the body temperature will tend to rise unless a breeze blows off the covering of vapor from the skin, leading to accelerated evaporation. The body regulates its temperature by adjustment of the physical means for the loss of heat rather than the chemical means for change in heat production.

When the external temperature falls the loss of heat by evaporation is vanishing and the loss by radiation is restricted. In a dry air external cold can readily be compensated by clothes. But when the air is damp a purely mechanical process causes further loss of heat from the body by a means not under physiological control; namely, conduction. Water vapor is a fairly good conductor of heat; it soaks through the clothes and continues the abstraction of heat so as to chill the body to an uncomfortable or dangerous extent. Our colleague, Dr. Hall, when here a short while ago, detailed some interesting climatological experiences gained at Camp Logan near Houston, Texas. This is the warmest camp site in the United States. At 8 a. m., at Houston, the average temperature in July is 81° F. and relative humidity 87 percent. In January, the temperature at the same hour is 54° F. and the relative humidity 84 per cent.

Major Hall, noticing that the slightest muscular exertion in summer was attended by immediate copious sweating, took pains to compare his liquid intake and output to ascertain the relative activity of skin and kidneys.

Measuring all the fluid imbibed in twenty-four hours, the liquid being drunk in the ordinary way, as needed, it amounted to more than one gallon, while the volume of urine passed in the same time measured but thirty ounces. On the other hand, in winter time, with the thermometer well above the freezing point of water, it was almost impossible to keep warm in bed. The chill was so insidious that this experienced clinician at first thought he was falling victim to an infection. The explanation, of course, lies in the fact that the loss of heat from the body was dependent on its absorption by the moist air and was not under physiological control. I ask you, could any more practical or worthy subject of medical study

be conceived than one that embraces these data of climatology? Must we not believe that in diseased organs, whose field of physiological reaction is definitely restricted, these climatic stimuli are of the utmost moment in their influence of functions?

No adequate calorimetric study of man in different climates has yet been made, but enough facts have been accumulated to show that the basal metabolism remains the same under a wide range of latitude from the equator to the Arctic circle. The functions to be investigated are evidently the factors of compensation through which the temperature of the body is kept uniform under a constant intensity of metabolism but varying external conditions. This subject will be dismissed with the warning that heretofore our conception of medical climatology has been hopelessly warped by the adventitious association of certain infections.

We speak of "tropical diseases" as if there were an inherent union between them and equatorial heat. Gorgas and others have shown that infectiveness is no property of the tropics. In no field of preventive medicine has it been shown that climate is responsible for the inception or transmission of disease.

When we extend our purview of meteorological climatology to embrace elevations high above sea level, we come upon a set of conditions which induce well nigh unique physiological reactions. In a brief sketch like this it is not possible to elaborate this broad theme. I will assume the verity of the conclusions reached by Douglas, Haldane, Henderson and Schneider in their great research in 1913 upon Pike's Peak, the altitude exceeding fourteen thousand feet. To me the fact of outstanding interest is their well substantiated claim that at high altitudes the taking up of oxygen by the lungs does not altogether depend, as had been universally taught, upon the physical law for the absorption of gases but upon active secretion on the part of the cells lining the alveoli of the lungs. They fully confirmed, in addition, the postulate of the proportional increase of hemoglobin and of the red corpuscles in the blood under the same conditions. They argued that all the effects of low barometric pressures are dependent

upon the diminution of oxygen pressure in the air, a conclusion which has been supported by Loevenhart and his colleagues by laboratory experiments made near sea level.

Haldane and his colleagues declare that the full physiological reaction to high altitude, development of the function of oxygen secretion, increase of hemoglobin, etc., is not secured until after the lapse of several weeks. This is the period of acclimatization during which the body is acquiring the ability to live a normal life at the given elevation. They maintain that the physiological reactions which are so striking when induced by the strain of great altitude are already discoverable at very moderate elevations, such, indeed, as little, if at all, exceed that of Denver.

It is proved beyond question that an individual acclimatized for a state of rest may instantly exceed his physiological reserve upon undertaking the slightest muscular exertion. Is it necessary that one should take your time in an argument for the practical importance of these facts to a group of Colorado physicians? When we realize that the outstanding fact of disease is a limitation in the field of functional reaction, is it not clear that invalids, specifically those with affections of the heart and lungs, should show a lower threshold of irritability than the well to the strain of lowered oxygen tension?

Yet the curriculum of our Medical School omits this whole range of vital information.

I will venture to emphasize the practical aspects of this subject by reference to certain personal clinical experiences which, accumulating through many years, have only recently become harmonized by a rational explanation.

I have under observation a boy of twenty who came to Denver in excellent general health but with a limited area of tuberculous, dry consolidation below the right apex. While at complete rest, his temperature was normal and his signs improved. Allowed to rise and visit the bathroom for a brief period in the morning, there was a progressive rise of temperature and the appearance of moist râles spreading from the recognized tuberculous focus to the other side. On the

enforcement of complete rest, within twenty-four hours the signs of moisture fully disappeared and the temperature declined. Three times within as many weeks was this series of observations repeated. Every attempt at exercise was followed by moist râles in the lungs and their disappearance with physical rest. Nevertheless, judging by the signs, the area of tuberculous infiltration has been greatly extended. These facts cannot be reasonably attributed to rapidly shifting tubercularization, but if we suppose the moisture apprehended in the lungs with exercise was due to edema resulting from an unacclimatized lung and circulation, the whole process is clear.

I beg your patience while referring to a congeries of casualties of similar origin of which each of you must have been the impotent witness. A patient with extensive pulmonary tuberculosis in an "arrested stage" takes a trip to sea level without apparent detriment. He returns to Colorado and, with a confidence founded on his former experience and stimulated by the "champagne air", he exercises as had been his wont before his departure for the East. Now something happens; he becomes breathless on the slightest exertion; the doctor is called and, if sufficiently skilled in physical diagnosis, finds signs of edema throughout his patient's lungs. That patient dies within a few days. The result has been due to demands made upon the heart and lungs under conditions of barometric pressure to which the body had not renewed its acclimatization.

One thought more. The last few years have presented us with a most important contribution to our clinical knowledge of metabolism under the guise of reaction of the blood determined by the incessant play between the acid and alkaline radicles of that medium. Diminution of the "alkali reserve" leads to pathological symptoms whose significance, I venture to assert, is rarely recognized although that recognition may be of vital import.

None has yet worked out the barometric relations of acidosis, but what we have learned of high climate physiology would seem to indicate that the development of

acidosis is an important factor in the disturbances that accompany overthrow of the physiological balance in the unacclimated, and that it is especially prone in this environment to attend any pathological condition of circulation, respiration or metabolism.

We are all the slaves of soluble toxins, leucomaines and hormones in the circulation. It is the delicate task of the physician to discover the nature and source of the peccant agent of disorder. Among the means of vital restoration possibly none is so safe and effective as the physical forces of nature.

Having now superficially sketched the outlines of one third of my subject, the limitation of time compels me to completely forego the rest.

I have only sought to show that the study of vital reactions to the physical elements of the world we live in, and these form the content of medical climatology, is worthy of a place in the medical curriculum.

A similar congeries of facts and a like course of argument could easily be offered to exploit the claims for practical and philosophic importance on the subject matter of hydrology and of gymnastics.

433 Majestic building.

DISCUSSION.

C. N. Meader, Denver: There is, I think, no question as to the importance of the subjects Dr. Sewall has discussed in his paper. They represent deficiencies in the medical curriculum which are manifested in the every day practice of each one of us.

Climatology is a subject with which every physician practicing in Colorado should be especially familiar. A great many patients are sent here from elsewhere to take advantage of this climate, and we ought to be able to give them very good and sufficient reasons why they should be here. Many of us are unable to give those reasons in detail or in satisfactory sequence. We all of us ought to be able to defend our position when we insist that the climate of Colorado is one which is of benefit to patients with tuberculosis, and to controvert the attacks which are constantly being made by physicians in the East who say there is nothing whatever in climate, and who finally send patients out here only when they are not able to do anything for them in the East. From these two selfish standpoints climatology is a subject in which we all should be well versed.

Hydrotherapy is another subject concerning which our knowledge is becoming more and more essential. We have known for a long time that baths are good for typhoid patients, not only because they quiet the nervous system and combat toxemia, but because they bring down the temperature. It is only within a short time that this

knowledge has been applied to the treatment of mental conditions, to the quieting of patients who are mentally restless, with very excellent results. There are undoubtedly many other fields in which external hydrotherapy could be applied with very great effect if we knew more about it, though most of us dismiss it with very little thought. The same is true of internal hydrotherapy, of the use of the various baths, spas and springs. A patient asks if such a spring will be good for him, and we are apt to give him offhand an opinion that it will or it will not, or we put it off and see what is in the water and tell him next time it will or it will not do him good. We should be sure of the grounds on which we give that advice. Very often I fear we are not at all sure not only because we do not know definitely about the effects of the contents of the various springs upon the system, but because no one else knows this accurately.

Somewhat the same thing applies to gymnastics in the treatment of disease, that is, mechanotherapy as it is called at the present time. This is a subject we must know about very soon because the demands of the army in the reconstruction of crippled soldiers will make it necessary to use it a great deal. We should not only familiarize ourselves with the medical literature on the subject but with the results obtained by it.

None of these subjects, as Dr. Sewall has said, appears in any reasonable amount—usually they do not appear—in the curriculum of medical schools at the present time. It is not however as simple a matter as it might seem to add new subjects to the medical curriculum, for those already included demand even more time, than is given to them at present. These three are nevertheless among those which can be profitably added and must be added. The medical student must know something about these things before he graduates. It should be remembered, however, that the medical student upon graduation is not a completely and entirely equipped practitioner, but rather a man who has the foundation of medical knowledge to which he can add by reading after he gets out of medical school. If he has not formed the habit of reading and thinking for himself and of studying his individual cases, he will not rank high as a practitioner. If he has formed that habit, it does not make very much difference what subjects he has had in his curriculum, he will make of himself a thoroughly sound, progressive and well-rounded practitioner, despite gaps in the curriculum.

Dr. Sewall is quite right in saying that these subjects should be included in the medical course, and I believe that they will receive more attention in various schools as a result of those war conditions which are stimulating medicine in every direction.

O. M. Gilbert, Boulder: I do not feel competent to discuss Dr. Sewall's paper to any extent. There are a few points which I think deserve particular emphasis. The climatological feature is the one that interests us directly, and it is a thing upon which I have long felt our knowledge is too vague and general. I agree with Dr. Meader that when patients ask us for advice and for the reasons why the Colorado climate is better than others, we can only tell them in a general way. I am very sorry we have not an active climatological section in the American Climatological Society in the West. We neglect the various offshoots or side issues of medicine, such as psychotherapy and other things which were discussed yesterday, and that is the reason why the various "antis" get their hold—it is our neglect of certain depart-

ments of our art, and we cannot expect things to be otherwise so long as we neglect them.

In following the work of Joel Goldthwaite of Boston one can readily see what an enormous field is being opened up in the line of postural defects. The part that posture plays in visceroposes, sacro-iliac difficulties, broken down arches, and all those things we recognize, but the mechanical factor is only one factor, the infection constituting the other, yet this mechanical feature must not be neglected, and what Goldthwaite has accomplished in these cases by means of posture and gymnastics is amazing.

ABSOLUTE REST IN THE TREATMENT OF PULMONARY TUBERCULOSIS.*

S. W. SCHAEFER, M.D., COLORADO SPRINGS.

By far the greatest advance in the treatment of pulmonary tuberculosis in the last ten years has been the realization of the importance of absolute rest. Ever since the work of Brehmer, Dettweiler and Trudeau, in the early eighties, the treatment of tuberculosis has been summed up in the trilogy—rest, fresh air and good food—and these together with climate in the case of those fortunate enough to be able to obtain it, have been our main weapons in the fight against tuberculosis; and that these have in a great number of cases been inefficient, is shown by statistics from many sanatoria. However, with our increased knowledge as to how to use them, our end results are certainly improving.

All of us who have had any experience in treating tuberculosis know that some patients will get well regardless of what they do, that some will not get well in spite of having everything done for them, but that the great majority of tuberculous patients will get well if they will do the right thing over a sufficiently long period; and our greatest efforts should be directed towards helping this great third class, thereby giving every one his best possible chance.

Brehmer was the first physician to hold out any real hope to the consumptive, and although he has been pointed out as an apostle of exercise he took the greatest care to prevent his patients experiencing fatigue. Dettweiler emphasized the importance of rest out of doors, but he laid more importance on the fresh air than on the rest. The

importance of rest was emphasized more by the men who came after Dettweiler, among them Turban, Cornet and Penzoldt, while opposed to them was Walther of Nordrach who advocated vigorous exercise.

In this country Trudeau was the earliest and foremost follower of Brehmer and Dettweiler, and he was always a strong advocate of rest; and in his later years he emphasized it even more. In a personal letter to Dr. J. H. Pratt, he wrote: "I cannot help but feel that although, of course, there are cases that are much benefited especially by graded exercise, the fact still remains that when a tuberculous process shows any degree of activity, rest is the safest plan to follow. I know I have hurt nobody by rest, but I am quite sure I often have by allowing them to exercise". On the other hand Austin Flint in the sixth edition of his "Practice", published in 1886, strongly recommends "exercise in the open air", and this teaching has to a much too great extent been handed down in our medical works. Even in that excellent treatise on Pulmonary Tuberculosis by Fishberg (1916), the statement is made that when the patient's temperature is less than 100° F., he should be allowed to be up and to exercise. Under the influence of Trudeau the Saranac school, especially Brown, Baldwin and Kinghorn, has done excellent work in popularizing the rest idea, and in showing the need and efficiency of absolute rest.

Probably the greatest hindrance to the proper development of the rest idea in this country was the work of Paterson, at the Brompton Hospital Sanatorium, in England. Paterson employed long walks and graduated labor on the theory that the "autoinoculations" thereby produced would react favorably on the tuberculous process in the lungs. While this theory was still being tested in England it was received with favor in this country, and crudely adopted in many sanatoria. The end results of the Brompton experiment were disappointing even to those in charge of it, and a very interesting comparison is published by Pratt, of Boston, of a series of cases treated by graduated exercise at Brompton, and another series treated by himself under the absolute rest plan. The patients compared were of the same eco-

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

nostic status, only Pratt's initial group was much smaller than the Brompton group, being only forty-two as compared with nine hundred sixty-five. At the end of the first year there were five hundred ninety-three in the Brompton group well and working, and forty in Pratt's group, while at the end of the seventh year the Brompton group, well and working, was reduced to five while Pratt's group numbered twenty-one; i. e., a percentage of seventy in the rest cases and twenty-three in the exercise cases.

However, the advantage claimed for the rest cure is not based entirely upon clinical experience. Tendeloo has emphasized the fact that the diseased portion of the lung contains more lymph and expands less than the surrounding healthy lung and believes that the tuberculous process in the lung is spread by the aspiration by the healthy portion of lymph from the diseased focus which presumably contains tubercle bacilli and toxins. Also if the lung is brought to complete rest, the flow of lymph through the tuberculous focus is very much diminished with consequent decrease of nutritive substance to the diseased area and the accumulation therein of tuberculous toxins, which definitely retards the growth of the bacilli.

In treating tuberculosis our entire aim is to increase the resistance of the patient—to increase the resistance above the virulence of the bacillus. Much has been said and written of "resistance" in tuberculosis without any definite idea as to what was meant by resistance. A. K. Krause claims that a person's resistance to tuberculosis is that person's power to form scar tissue around a tuberculous focus of such density and completeness that the focus is entirely cut off from the circulatory system. If this is correct—and Krause has advanced very effective arguments and proofs in favor of it—the researches of Tendeloo again point out the rationale of rest. He has shown that a chemical irritant injected into normal lung tissue produces a central necrosis surrounded by areas of different degrees of inflammation, and outside these a zone of scar tissue formation. In tuberculosis scar tissue is likewise formed by the reaction of the lung to the irritation of the toxins of the bacilli.

These toxins cause the most efficient formation of scar tissue at a certain optimum distance; if the parts are constantly moving, the "optimum distance" will be distributed over a greater area of tissue, but since it is not concentrated at any given point, the scar tissue formation will be less effective and less complete. Therefore the quieter the lungs are kept the more efficient will be the scar tissue formed.

In addition, our tuberculous patients usually come to us below par in body and nervous energy and weary in mind. It is a well known fact that rest in bed is one of the chief aids in building up the run down body, and this is the more important when a tuberculous infection is added, for in addition to building up the general strength antibodies must be formed to combat the tubercle bacilli. Instead of wasting the small store of energy the patient still has, in holding himself erect or sitting or moving about, all this energy should be concentrated upon fighting the disease.

If the above facts are true—and they seem quite well substantiated—why should anyone not make use of rest to the nth degree in treating tuberculous patients? And by the term "rest" in this paper, I mean absolute rest in bed over a considerable time. Our main object in using rest is to keep the lungs as quiet as possible, and this is best done by the absolute relaxation of muscle and mind, which can only be obtained in bed. Sitting in a chair does not give the complete relaxation of muscle that occurs in bed. It is, of course, a physiologic fact that the lungs expand to a diminished extent in bed. It is, of course, a physiological fact that the lungs expand less frequently when one is lying quietly in bed than when in any other position.

It is easy enough to advise rest in treating tuberculous patients, and the question at once comes up, "How?", so I shall briefly describe the plan I have used which has accomplished some very good results. When the patient first comes, regardless of the stage of the case, or the temperature or pulse, he is put to bed and kept there for at least a month or six weeks; if the patient has an elevation of temperature or pulse, the

bed treatment is continued until he has had no fever for at least a month, and the pulse has improved in quality. Moderately advanced, and far advanced cases are often kept in bed for several months after the temperature is normal, depending on the examination of the chest, and the amount of cough and expectoration. In this plan the patient is allowed to go to the bath room once a day when the bowels move, at which time the bed is made up. All meals are eaten in bed, and following each meal a period of complete relaxation of half an hour is required; after the noon meal this period is lengthened to two hours, when the patient is not permitted to talk or read, and is encouraged not even to think. At other times light reading and short friendly visits are allowed in moderation.

If after several weeks this routine has not banished the temperature and decreased the cough and expectoration, a more rigorous rest cure is instituted. The patient remains absolutely in bed, not going to the bath room at all, and getting out of bed only when it is necessary to change it. It is always annoying and very often most difficult for patients to use the bed pan, and in many cases I find that it requires less effort on the part of the patient to use a commode placed at the side of the bed, than the bed pan. If after this treatment the temperature still persists, a "typhoid rest cure" is instituted, the patient not even feeding himself, and in some cases not being allowed to talk or the amount of talking being very strictly limited. In talking, the lungs are often used more than in walking, and it hardly seems logical to put patients to bed to keep their lungs quiet, and then allow them to talk at will. By prohibiting all talking and having the patients use a pad and pencil to make their wants known, I have several times been able to get rid of fever that had resisted all other measures.

In addition to simple rest in bed any other means to decrease the expansion of the more affected side is used, such as lying on that side on a small firm pillow, as advocated by Webb, and using a weight, as a brick, on that side. Of course the bed is on a porch which in severe weather can be closed at

meal and bath times, or else the bed can be wheeled into an adjoining warm room. If the case is one suitable for artificial pneumothorax, and such is indicated, the treatment can be considerably shortened, for by no other method can the lung obtain such complete rest. In extreme cases the extrapleural thoracoplastic operation of Sauerbrück as developed by Stough and Shivers has certainly given some good results in otherwise hopeless cases. It is interesting to note that all operative procedures aim at keeping the lung absolutely quiet.

In beginning the rest treatment it should be carefully explained to the patient with all the "wherefores and whyfores" and in the great majority of cases they will readily comply. The most common objection is, "But, Doctor, I will get so weak". To which I always reply that it will be easy enough to get back their muscle strength when they are well, but that if their lungs are once gone they cannot be replaced. Then some will say that it might do for others but not for their particular temperaments. But temperament should no more rule in tuberculosis than in typhoid or pneumonia. And after they get to bed and find how much more comfortable they really are, it is often surprising how contented and happy they become.

It is most important to continue the bed treatment for some time, for our aim is the formation of dense scar tissue in the lung around the diseased focus, and this is an extremely slow process. One of the best cures I have ever seen is that of a young fellow who five years ago showed moist râles over every square inch of his lungs even after being in a sanatorium in Colorado for over a year, and the thing that put him on his feet was a year of absolute rest in bed; he is now working hard every day and quite well. And this is by no means an isolated case.

When I have spoken of fever or elevation of temperature I have meant any temperature over 98.6° F. with the patient resting in bed and the thermometer kept in the mouth at least five minutes, and in cold weather fifteen minutes.

We in Colorado have seen such wonder-

ful results from our climate that we have too often neglected all other aids. However, I am confident that those who will emphasize "Rest" in their treatment of the tuberculous will be extremely gratified with their results—and, rather a month too long in bed than a week too short a time.

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DISCUSSION.

M. I. Marshak, Edgewater: It seems to me that after a man has put in as much work as Dr. Schaefer has on this paper, it ought to be freely discussed, and inasmuch as I do not quite agree with what Dr. Schaefer has said, what I am going to say may provoke some discussion.

Complete rest in bed for a prolonged period of time after the temperature has come down to normal is, in my experience, of limited importance; it has not proven a godsend to humanity, and in many instances it has done more damage than good. That is a rather harsh statement to make, but I make it advisedly. I am working with charity cases. My experience has been very largely confined to charity cases, and these cases come into the hospital too sick to work. Families are broken up and all the different charity agencies are called upon to assist in working out the fate of these individual cases, mostly men. What has rest done in these cases? They are the ones, after

all, that take up the attention of the great majority of social workers and quite a number of men who are engaged in tuberculosis work. I think it was McSweeney, who had considerable experience in the same type of work, who made the statement that complete rest in tuberculosis for a prolonged period of time after the temperature came down made healthy loafers out of sick working men, and in the institution with which I am connected, the Jewish Consumptives' Relief Society, which is practically a postgraduate course, I venture to say that eighty-five percent of the patients have had institutional treatment somewhere else. We find it a difficult thing to overcome. We find cases that have been in institutions in the East, that have had rest so well instilled into them that they have lost the power of helping themselves. They come to us with lesions which are to all intents and purposes healed. You could not find a rôle there if you made a patient cough for hours unless you ruptured something. These patients have no temperature; their pulses are normal, but they are afraid to help themselves, and it takes months of argument and endeavor to prove to them that they are economically worth something, and we have proven it in a great many cases. We send them out to work; we make them do some work at the sanitarium. We send them out to earn a living. They bring their families to Colorado and become useful citizens. If we had continued everlasting rest they would not have become useful citizens.

When we are talking about rest, we are talking about complete bed-rest, and I have reference now particularly to the chronic fibroid cases. In an institution like the one I am connected with, chronic fibroid tuberculosis is the common type we have. Are we going to judge the case of that man because he has râles in his chest? Remember, he runs no temperature; his vessels are good, and he remains stationary in weight. His pulse may be a little elevated on exercise. Now, are we to judge that case because the man has his chest full of râles and say that he is not able to work? Physicians who are practicing in Denver know differently. Hundreds of patients and their own friends are earning a living, with râles in the chest. Should we put them to bed and keep them there indefinitely because they have râles? I should say no.

I hope that what I have said has been sufficient to arouse enough antagonism to bring out a free discussion of Dr. Schaefer's paper, because it is a well-worked-up contribution on the subject.

C. D. Spivak, Denver: I think the remarks of Dr. Marshak have aroused a little antagonism, and I am prompted to say a few words on the subject. In the first place, of all the papers I have read and heard yesterday and today, I should say that Dr. Schaefer's paper contains more original thought than any of them. He has brought out one idea so clearly that it is worth a good deal to those who have large numbers of patients to treat among the tuberculous, and they should put it to a test. The idea that is most original, as I understand it, is this: If fever continues after a long bed rest, then he has found out a bed-pan rest. He says, keep the patient in bed. Everybody knows, for instance, why we use a bed-pan, but he uses, furthermore, not only a bed-pan, but he says, keep the patient absolutely quiet. Keep him in bed a little longer. This is a form of rest I have not seen anywhere recommended for tuberculosis patients, and it seems to me it is a point that should be followed up and should be tried.

The other point to which I desire to call attention is this: In a sanitarium of fifty people, who

have had a long siege of fever and have all been kept in bed, if twenty-five of them could afterwards be kept for a month longer in bed, and twenty-five permitted to go out and watched, it would be interesting to see what would happen between these two groups. That is a good point for investigation.

I think Dr. Schaefer's paper has given us the most original thought that I have heard expressed for a long time in reference to tuberculosis.

Henry Sewall, Denver: I think Dr. Schaefer's idea is of fundamental importance. Few of us know what rest means, and he has evidently got to the soul of rest better than most of us. I continually have to talk to sick doctors when they have a temperature, and I claim they have not done the right thing. I have asked them whether they have been perfectly quiet, and they have replied, "Yes." Do you go to the bathroom? "Yes", they say. Then I reply, "You have not been quiet. Do you sit up for meals?" And they reply, "Yes", and they call that rest. It is not rest.

What I would like to say in reference to those men who claim so much for exercise in tuberculosis cases would hardly be parliamentary, but the good results they get can be explained on the ground of the homeopathic doctrine of "similia similibus curantur".

C. N. Meader, Denver: Dr. Schaefer's paper is a very clean-cut and definite contribution to this subject.

I do not believe that Dr. Marshak and Dr. Schaefer have different ideas concerning the same type of patient. Dr. Marshak is talking about one stage and Dr. Schaefer about another. There is absolutely no question of the value of rest in tuberculosis, or of absolute rest applied to patients with any acute disease. There is equally no doubt of the value of exercise in tuberculosis and the absolute necessity for it in patients in whom the disease has come to a standstill from rest, and whose toxemia is so under control that exercise can be taken. Let us take an individual recovering from an acute cardiac disease, for example. We give him a little exercise, and if he stands it well, increase this to train the heart muscle until we reach the limit of its tolerance. The same is true of the muscles of the leg after poliomyelitis. The same process holds true of the recovery of the kidney following the acute stage of nephritis. In tuberculosis we should spare the lung until the acute stage is over, but then gradually increase exercise until we can reach the limit of what the patient can do. In my judgment, the view put forth by Dr. Schaefer is absolutely sound. There can be no question as to the value of rest, and absolute rest, during the acute stage.

As to this prime factor in the treatment of acute tuberculosis, we all underdo it rather than overdo it because we are afraid to lose the patient, or because he or his friends object to the treatment which he ought to be undergoing, or because objection is made to the length of time required. We all of us underdo exercise in chronic tuberculosis because we are again afraid the patient will consider our judgment of no value on account of having been told by somebody else that he ought not to exercise, when we know from our own judgment that with a normal temperature, normal pulse, no night sweats, no signs of toxemia, irrespective of the signs in his lungs, he is able to do with benefit a reasonable amount of work. A patient must often be made to exercise when he reaches the stage for exercise, just as he must be made to rest during the acute stage.

As I see it, there is no contradiction whatever in Dr. Schaefer's views and those of Dr. Mar-

shak; they are talking about patients in two different stages.

G. B. Gilmore, Colorado City: This is an exceedingly interesting subject, and Dr. Schaefer does not claim any originality in calling attention to rest and the degree of rest. Saranac has led the country in the treatment of tuberculosis, and during many years has led the way in the rest treatment. Ten years ago a patient in the Saranac Sanatorium under Trudeau was not allowed to stay in bed with a temperature of 99.6° on three successive days. A few years ago Dr. Brown, one of the leading men there, reached the point where every new patient in private practice was put to bed absolutely for the first month and treated almost as a typhoid case. A physician from Boston has written very severely about the lack of absolute rest in all cases where there is no temperature or even a temperature of 99° in the afternoon. Colonel Bushnell has also laid great stress upon absolute rest.

My experience in the last year or two has convinced me of the value of rest. Three years ago I thought those people who were kept on absolute rest would not be of any value to society or to themselves again. In those three years I have seen these men go out after a year of absolute rest, continue their work and be valuable citizens. The most difficult part about enforcing absolute rest is the mental attitude of the patient. One must use a great deal of psychotherapy and a great deal of encouragement and make frequent visits in order to keep them absolutely on the job.

I have had the experience in the last year of having patients coming from the big men in New York City who had been recommended by those men to go to Saranac because they would have better physicians, but they came to Colorado where they would have a better climate. If the physicians in Colorado as a whole would make use of absolute rest treatment more in cases where there is no degree of fever, we would overcome that tendency on the part of big men in the East to consider that Colorado physicians are not on the job in this particular.

J. F. McConnell, Colorado Springs: This is a very important subject, and I do not believe we can overestimate the value of rest in tuberculosis. I would rather have rest today in a room without any window than to have exercise in the open air if I were actively tuberculous.

Credit should be given to Hilton for his little book on "Rest and Pain", which he wrote nearly thirty years ago, and in which he clearly set forth the idea of rest. He compared the inflamed lung with a joint and showed how the chest wall and ribs were analagous to the bony structures of a joint, such as the knee, for instance, the muscles moving the joint, and the muscles moving the ribs, and the nerve supply to the muscles overlying ribs and pleura being distinctly analagous to the conditions in a joint. Dettweiler followed Hilton and insisted on absolute rest, coining the term "cadaveric rest". I think the word cadaveric is the best one we can use in giving a clear idea of rest. Today we know what pneumothorax has done. Rest of the structure given by nitrogen brings about that amelioration of symptoms which you get from rest. As I have said, I do not believe we can overestimate the value of rest. It should not be considered except in conjunction with exercise. We have had presented to us today the value of rest and exercise, and the value of graduated exercises when fever is controlled.

Some years ago I had the opportunity of witnessing the work of Patterson in regard to auto-inoculation. I had the autoinoculation idea, and,

of course, he was dealing with a class of cases which must be helped quickly and were turned out to work or become burdens on the community, just the character of patients sent to fraternal sanatoria, with the time limited to six months or twelve months, and during this time these men must be restored to the greatest usefulness. I agree with Dr. Gilbert that after prolonged rest these men will become useful citizens, but that is only practicable in some institutions. It has been necessary to follow along the lines of combining rest with the early principles of graduated exercises in order to bring about good results.

G. A. Boyd, Colorado Springs: I am sure I do not disagree with Dr. Schaefer, but in putting into operation the measures he advises we encounter some dangers that should receive attention. To illustrate, within the last year I was consulted by a patient with this history: February 24. The patient wore a cast for eighteen months between the seventh and ninth years for spinal curvature in the dorsal region, supposed to have been tuberculous in origin. Since then she had been well and unusually robust; had been in training for a nurse two and one-half years without the least fatigue or sickness until December, 1916, when she began to feel tired. In April, 1917, she began her service in the operating room, and the first month noticed her heart beating rapidly and filling up her chest on running up stairs. In operations, if surgeons were cross or confused her, she became a little dizzy and felt a smothery sensation. She continued her work but lost some weight. In August, she first noticed a temperature of 99° to 100° between four and five p. m. She continued work but kept losing weight slowly, and excitement or exertion ran the heart beat up to one hundred and twenty to one hundred and fifty, with attending dizziness, filling up of chest and smothery feeling. She noticed that if she worked much with her hands gloved and removed the gloves, she could not put them on again. The temperature continued to run from 99° to 101° in the afternoon up to December, 1917, when she consulted me. Physical examination showed a good physique; height, sixty-five inches; weight, one hundred and thirty-six pounds; pulse rate, seventy-two; temperature, 99.4°; respiration rate, seventeen; pulse on moderate exercise, one hundred and twenty, and not falling below one hundred during the rest of the examination; heart sounds, normal; slight increase in cardiac dullness just after exercise; blood pressure, one hundred and fifteen and eighty. Nothing abnormal was found in either lung. The patient did not cough once involuntarily after repeated voluntary coughing and said she never coughed except in the mornings when she cleared her throat. There was no expectoration. A blood count showed over five million reds, nine thousand whites, ninety percent hemoglobin; von Pirquet, positive; complement fixation, negative; Wassermann, positive. Cultures from tonsils, which showed infection, showed staphylococci, pneumococci and streptococci in the order named. I could find no physical signs of lues. Patient was sent to a throat specialist, who advised a lung specialist, who found no positive signs of lung involvement, but advised the patient to go to bed and expressed the opinion that something was wrong with her right lung. Patient was put to bed and another specialist called in. He could find nothing but a rhonchus and a few vesicular râles beneath the right breast after coughing and forced inspiration. The patient was convinced she had tuberculosis; she lost from one hundred and twenty-five to one hundred and thirty-six pounds in the three weeks in bed.

She then had her tonsils removed. The afternoon temperature remained 99° to 100°, but she felt better and began to gain in weight and the pulse became slower. After three months she gained to one hundred and forty pounds, felt as strong as ever and, despite my advice to the contrary, took up postgraduate work in the East and has remained perfectly well with normal temperature since a few weeks after resuming her duties. She refused luetic treatment because she said she knew she had had no occasion to contract the disease and would take all responsibilities. I think this a case of endocarditis and that treatment in bed for tuberculosis would have been disastrous while treatment to save the heart by rest without removal of the tonsils would have been equally fatal.

Emanuel Friedman, Denver: I do not believe any one who is at all conversant with tuberculosis will for a moment deny the fact that rest is the strongest weapon we have in the early cases; nor will anybody question the efficacy of rest in exacerbations of chronic tuberculosis. But when it concerns activity in the chronic cases I think there is considerable room for difference of opinion as manifested by the discussion this morning.

I happen to have seen a great many of the patients who have been discharged from the Jewish Consumptives' Sanitarium, and have seen them for the last fourteen years. Almost all the patients in that sanitarium are advanced cases, and I can say positively and emphatically that dozens of those men harboring active tuberculosis, many of them with extensive lesions, have been making a living not only for themselves but also for their large families. I think in the face of such unquestionable facts we should be a little bit cautious in making statements which may do considerable harm, especially in the working classes.

Dr. Marshak has wisely called our attention to the fact that many of these patients out of fear of aggravating their tuberculosis will absolutely refuse to do work of any sort. They are and have been public charges for many years, and I think this state of affairs is a result of hasty advice given as to complete rest.

Dr. Schaefer (closing): I think Dr. Meader pretty well summed up the situation relative to Dr. Marshak's remarks, except that there are not a great many cases that are entirely different. I think in certain chronic cases we can put these men back at work sooner and keep them at work longer and prolong their lives by a definite rest treatment. I do not mean to imply that every person with râles in the chest should not be at work. I do not believe that, nor do I practice that principle. I do believe that anybody with fever should not be at work. As to the men without râles and without fever, I see no reason why they should not be at work; they do not need rest, but rather psychotherapy. I have also noticed the remark apropos of making a healthy loafer out of a sick working man. My difficulty has been in keeping my patients in bed long enough; they wanted to go to work before I wanted them to do so, and as Dr. Gilbert has said, it requires close supervision to maintain the complete rest, which I think is advisable.

There are a few patients, but they are in the great minority, who improve more rapidly with slight exercise than with rest, but rest will not harm those patients, and it is better to try rest first and, if rest will not bring them around, give them graduated exercises. If you put every one of them on exercise you injure a great many. Exercise has a place in the treatment of tuberculosis in getting patients ready to return to normal

life, but the danger of exercise is that it is used too soon, before the patient is really in a condition to exercise. Even if we keep our patients in bed a month too long, it really puts them back to work sooner and keeps them at work a longer time, as the comparison of rest and graduated exercise shows.

As to Dr. Friedman's criticism that absolute rest is used to too great an extent and over a longer time than it should be; I will say that he will have fewer chronic cases to deal with, and these fewer chronic cases will have fewer exacerbations, if he will emphasize prolonged bed rest more.

NECESSARY COOPERATION IN PRE-NATAL CARE AND OBSTETRICS.*

FOSTER H. CARY, M.D., DENVER.

Never before in the history of the world has the vital importance of adequate pre-natal care, together with conscientious and careful obstetrics, been so generally realized as at the present time.

Long before the outbreak of the present war, a very considerable amount of work had been done in the interests of the expectant mother, particularly among the poorer classes, especially in New York, Boston and Chicago. Since the entrance of the United States into the conflict, these efforts have received a tremendous impetus for which we should all be most grateful, and we should also be most willing to do our part in the education of the masses.

The enormous number of casualties which must necessarily ensue from sending into the war the very flower of manhood, together with the restrictions and privations of the countries involved, has brought home to us in a most striking manner a keen realization of the necessity of the preservation and the conservation of human life. Doubtless you are all familiar with the statements published within the past year revealing the fact that in the United States the mortality and morbidity in child-bearing is second highest only to tuberculosis; also that the death rate per one hundred thousand of the population is exceeded only by two of the sixteen leading countries of the world.

It has long been admitted that obstetrics has never occupied the position to which it is entitled, either in the minds of the profes-

sion or amongst the laity; likewise, that obstetrics in general has been far behind the advances recently made in other branches of medicine and surgery. For the purposes of this paper, I do not mean to designate as obstetricians only those men who practice obstetrics as a specialty, but also every physician or surgeon who takes an occasional confinement, either as a matter of necessity, those cases in which the family desire him to do so, or because he feels compelled to accept the case. It is not uncommon that men openly admit their dislike for obstetrical work, but accept the care of an occasional case for one or more of the reasons before stated. Whether the fault lies with the profession or with the laity, it is difficult to state. It is certain that a large percentage of these conditions are due to a lack of education, both of the profession and laity, regarding the importance of prenatal care. It has been a common remark that no other branch of medicine requires so much of a physician's time, is so little appreciated, and, in a large percentage of cases, so underpaid as obstetrics.

The laity look upon pregnancy as a physiological process, in many instances as a necessary evil, which must be borne with as much grace as possible and likewise with as little expenditure of time and money. Prenatal care necessarily should begin as soon after the advent of pregnancy as possible; and yet we all know how common it is for patients not to report either to their physician or to the clinics until late in pregnancy or until some abnormality calls to their attention this necessity.

Right here lies one of the most vital and also one of the most difficult conditions to be corrected, namely: the education of the public to the importance of seeking advice soon after conception has occurred.

The work now being done by such organizations as the Federal Children's Bureau, the Parent-Teachers' Association, the Children's Welfare Association, and many others of a like nature, is slowly but surely penetrating with a ray of welcome sunshine the clouds of ignorance, apathy, and indifference which have for years surrounded the state of maternity. The importance and splendid results following the establish-

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

ment and intelligent conduct of prenatal clinics, have been shown not only in the diminution of avoidable complications at labor, but also in the end results months postpartum.

It may be of interest to state a few of the figures recently published in the *Journal of Obstetrics* by Lewis J. Dublin, statistician of the Metropolitan Life Insurance Company. In compiling these figures, he has followed a method of limiting the report to females of the usual child-bearing age: that is, from the fifteenth to the forty-fourth year. From 1911 to 1916, inclusive, there were recorded 10,056 deaths from diseases and conditions incidental to child-birth. These deaths were related to the 14,694,260 women exposed. This correspond to a death rate of 68.4 per 100,000 women at these ages among insured females. From 1910 to 1915, there were 57,012 puerperal deaths recorded among women in the registration area in the United States between the ages of fifteen and forty-four inclusive, corresponding to a death rate of 63.1 per 100,000 exposed at these ages. It is also interesting to note that the death rate reached a maximum in the ages between twenty-five and thirty-four, being lower between fifteen and twenty-two; that is, higher in that period of years during which the greater proportion of children are born.

In the city of Denver during the year 1917 there were 3,948 births. Of these there were 144 still births, or 3.7%; deaths reported as due to the puerperal state, 33. The statistics giving the separate causes of death are as follows: Accidents of pregnancy, 6; puerperal hemorrhage, 1; other accidents of labor, 3; puerperal septicemia, 13; puerperal convulsions, 8; puerperal embolus, 2. There were 89 cases of premature births with death of the child. The number of children under one year of age which died in 1917, was 325, 60 cases being reported as due to congenital debility. Doubtless these figures would compare favorably with other cities, and yet there is room for improvement.

As regards the profession, we must admit that there are today a great many physicians who fail to impress upon patients the necessity of frequent and repeated visits to the office for examination, blood-pressure

taking and urinalysis. In many instances the physician merely gives to the patient a few moments' conversation as to her general subjective symptoms, and postpones pelvic measurements and palpation, blood-pressure readings, etc., until late in the pregnancy, often until it is too late.

Some complain that patients will not report as often as advised, and will fail to send samples of urine at stated intervals. This can be corrected, usually, by the use of the telephone or by a few words on a post-card if necessary.

The subject of obstetrical care is perhaps of the greatest importance to the so-called middle classes: that is, in the families of the small wage-earner, for it is these women who seek the physician who will confine them for a small fee and usually give attention in proportion to the fee. It is a well known saying that only the very poor and the well-to-do receive adequate obstetrical care. The former are eligible to a municipal hospital, and the latter demand a great deal of attention.

Prenatal care embraces a careful family and personal history, an early and complete examination, blood-pressure readings, Wassermann test, pelvic measurements, bimanual examination for displacements in the early months before the fundus has risen above the symphysis, at which time the nature of the pelvis can be best observed; urinalysis, and detailed instructions as to hygiene, diet, exercise, work and excesses.

In order to make this complete, it therefore becomes necessary to know the conditions under which the patient lives in her home surroundings, the nature and extent of her work either in the home, factory, or other place of occupation. It is in this particular regard that the various organizations through their own members, together with the visiting nurse association and the social service worker, render conspicuous service which is of vital importance in securing one hundred percent results. Doubtless the physicians of today and the members of societies for prenatal and obstetrical care are doing their utmost to safeguard the lives of the unborn infants. The problem confronting us today, is the question of

adequate and satisfactory cooperation, how best to reach the masses and to convince them of the importance of necessary supervision. Much good is being done by information spread among the masses by other women who have previously received this care, the efforts of the organization seeking out expectant cases, and patients seeking out the clinics for advice. Necessarily there is a large proportion which do not come under observation through any of these mediums, and a serious problem is, the best way to reach them.

In recent years it has been found possible to bring about legislation which demands the reporting of various diseases to the health department. Could not some legislation be enacted whereby the state of pregnancy should be reported, if necessary, in a confidential manner, to a proper department of the board of health? In this way it could be at once ascertained whether or not a patient had placed herself in the hands of a physician for care, was reporting to a clinic for observation, or was registered for care and treatment at a general hospital. Through this medium, the various organizations, charities and visiting nurse association could easily and rapidly seek out those cases which were worthy and required their assistance and advice. It may not be amiss to hope that the self-consciousness and false modesty which previously surrounded the state of maternity have been dispelled by the present needs and the joy of motherhood.

Of vital importance in the interest of the poorer classes is the establishment of a prenatal clinic to which these women should report at stated and frequent intervals, a careful record of their condition being kept from visit to visit, with instructions to report upon a definite date; and should they fail to do so, they should be sought out by a postcard reminder, by the visiting nurse association, by the social service worker, or by the student assigned to the case. In this clinic, a careful record of the student, detailing his visits to the case and his findings, could be kept and posted to date; it would be a check upon the student and of value as to his powers of observation and care. Were

it financially and otherwise possible for a social service worker to be employed jointly by the clinic and the municipal hospital, a vast amount of good could be done in the prenatal and postnatal care.

The social service worker, by the very nature of her training and experience, is best adapted to work in prenatal care. She is in a position to observe the conditions under which the patient lives, and is not called upon to devote any time to actual nursing. The very nature of her position makes it easy for her to inspire confidence in the cases under observation, and to act as a great factor in the establishment of cooperation between the charities and the physicians or hospitals. By the efforts of the social service worker, the dispensaries and hospitals in many cities have been able to eliminate from these clinics those patients who were able to pay at least a nominal fee, and to put a stop to the abuse of the clinics. She is a full time worker and her need is real, both in prenatal work and in the follow-up, for end results. The responsibility does not cease at the time of discharge of these cases. To get the best results, some system of follow-up care must be devised in order to ascertain whether or not these women have passed through this vital period in their lives with the proper care and supervision which it is their divine right to demand.

DISCUSSION.

C. A. Ferris, Denver: The subject of this paper is one of vital importance. It is an essential which is proverbially neglected and passed over. Its neglect is an evil which, like neglect of the care of the insane, will gradually be eliminated in the following manner: We are approaching an era when the ethics of the practice of medicine and surgery will allow us to reach out from their narrow confines and take into our confidence the more intelligent members of the laity, such social workers as are willing and anxious to devote proper efforts along the lines of elevation and betterment of humanity. This paper sounds the keynote along these lines. These efforts will take a direction largely as follows: Educational laws for the promotion of scientific knowledge among the laity leading to, for instance, questions of legal control of pregnant women such as the paper suggests; if necessary, compulsory registration of all cases of pregnancy. This will lead in turn to compulsory Wassermann and tuberculin tests in pregnant women. These are probably two of the most important things we are at the present time unable to get under our control for lack of proper facilities.

Then comes the question of the midwife. These laws then will either result in the elimination of the midwife or in the control of midwives which will in turn require laws for their better education and proper licensure.

This subject should not be lightly passed over, and in conjunction with the ideas that have been promulgated in regard to the care of the insane there comes in perhaps the more vitally important question of the future of the race, and as I have said before, this paper sounds the keynote of the situation.

M. Jean Gale, Denver: There is just one point I would like to bring out in connection with this very important subject of the prenatal care of the baby. In the last two or three weeks I have seen three cases of primary optic atrophy in children, and in each case apparently there was difficulty attending the labor and possibly an instrumental delivery. I would like to draw the attention of the general practitioners and obstetricians to the point that the trouble may begin at the time of birth when the baby's eyes are apt to be overlooked until school age, and then the child is brought to the attention of the oculist, and valuable time has been lost. If the oculist could be brought into the case soon after birth, suitable treatment might be instituted and the accident avoided. While this suggestion may not be apropos of this paper, nevertheless these children appeal to me in coming to us in this condition at a time so late that little can be done, and the general practitioner is apt to say to the parents that the child will outgrow these conditions.

Dr. Cary (closing): I think Dr. Ferris puts the question before us very clearly in regard to the measures to be taken with reference to prenatal care, and in relation to obstetrics. With the proper supervision of the practice of obstetrics it is bound to come.

It may be interesting, if any of you are interested in the question of child welfare, to speak briefly of what is being done in some of the European countries. There is an article written by Mary Potter in the May number of *Pictorial Review*. She relates in a spectacular manner what the conditions are in France and in England in regard to prenatal care and the care of the expectant mother at the time of confinement. The work Professor Pinard has been doing in Paris has attracted a good deal of attention. In European countries this matter has been brought home in a serious manner. Professor Pinard in this article, as in two other articles published in journals devoted to obstetrics, is shown to have brought about, through the Academy of Medicine, legislation which will award to these women from the inception of their pregnancy until the child is one year old allowances of ten francs and fifteen centimes a week throughout the entire period. At present ten francs and fifteen centimes are allowed four weeks before confinement and four weeks afterwards. Not only that, the women in municipal factories are saved from exposure, being accepted in preference to women not expecting to bear children. They are provided for and an allowance is made to carry them through pregnancy, and they are usually provided, after the baby comes, with nurseries, well equipped buildings which cost many thousands of dollars, where the children can be cared for while their mothers are working in the factories.

I hope the time will come when we shall have cooperation in regard to the supervision of these women in our state, not necessarily by the physicians themselves. It is a simple matter to have cooperation between the various organizations, but

at present there is no real connection or intercourse between organizations and the physicians and clinic. The history of a woman is taken, and she is perhaps confined by a student, or by an outside physician or she may be confined in the county hospital. When she goes out of the county hospital it is hard to tell what her condition was at that time, and in a great many instances no record is made of what the postpartum findings were. When that case again appears at the clinic there is no record in regard to the conditions which existed during the period between her first examination and final discharge. It seems to me there should be a comprehensive system which will follow up these cases from the inception of pregnancy until after they are finally discharged.

News Notes

Douglas on a ten days' furlough in the latter part of June.

Dr. F. R. Spencer of Boulder was elected a director of the American Laryngological, Rhinological and Otolological Society at the meeting held in New York City, June 6th and 7th.

The Routt County Medical Society has been superseded by the Medical Society of Northwestern Colorado, which will take in the counties of Moffat, Routt and Grand.

Dr. W. T. Bronson of Pueblo has given up his home at that place and relocated in Centerville, Iowa.

Dr. C. W. Reed of Grand Junction is attending summer courses at Harvard University and will be absent from his home the entire season.

The death of Dr. W. Case Williams, aged 68 years, occurred in Denver June 22, following several months' illness.

Lieutenant-Colonel Frederick J. Pierce of Pueblo has been put in charge of the United States health service in the district composed of Colorado, Utah, New Mexico and Wyoming. His duties will relate to the care of sick or disabled soldiers who have been discharged from the service.

The cornerstone of the new Moshaw Zkenim home and hospital for the aged and helpless and for the sick, other than consumptives, was laid in Denver June 22, 1919.

A free clinic for venereal diseases has been established for El Paso County in Colorado Springs. Dr. A. H. Peters, county physician, will act as local representative of the federal health boards in connection with the clinic.

Dr. C. T. Burnett, formerly of Boulder, has removed to Denver, where he will be associated with Dr. Sherman G. Bonney, according to press reports.

Dr. C. A. La Rue, following the completion of a postgraduate course at Harvard, has returned home and resumed practice in association with Dr. F. R. Spencer.

Out of one hundred and ninety-five thousand American soldiers wounded in the recent war, one hundred and eighty-two thousand have recovered, according to a Red Cross bulletin. This means that the army medical corps (with due credit to the Red Cross) has kept effective ninety-three and three-quarters percent of the wounded.

Dr. J. W. Ames of Denver was agreeably surprised at receiving on July 3rd a special citation for exceptional meritorious and conspicuous services rendered at base hospital No. 29, and at Brest.

Dr. Gerald B. Webb of Colorado Springs has been awarded the distinguished service medal by General Pershing.

Major Oliver Lyons of Denver received his discharge from army service on June 28th and is now on his way home. He is spending a few days with Mrs. Lyons in Burlington, Wis. Dr. Lyons will resume practice in new offices with Dr. J. N. Hall on the second floor of the Metropolitan building.

Dr. Robert G. Packard of Denver has received his discharge from army service, returned home and resumed practice in association with Dr. G. B. Packard, 216 Metropolitan building.

Dr. N. H. Knoch of Denver has been honorably discharged from the service and has resumed practice at his former office in the Tabor block.

Dr. F. R. Spencer of Boulder has been elected vice-president of the Colorado State Board of Medical Examiners.

Dr. Frank L. Dennis of Colorado Springs arrived home the first of July to resume his practice, having been honorably discharged from army service.

The editor is in receipt of a program for the forty-first annual meeting of the Medical Association of Montana, held at Missoula, Montana, July 9-10, 1919. The character of the program indicates that the Montana association is thoroughly alive and progressive.

Dr. Tracy R. Love of Denver, who left the middle of June to spend a month in New York in recreation mixed with postgraduate study, was expected to return home about July 15th.

Dr. Thomas J. West of Denver has ordered his Colorado Medicine changed to Pasadena, California, until further notice.

Dr. Mary Elizabeth Bates of Denver has announced that she will give special attention to the restoration of function by mechanotherapy after dislocations and fractures.

Dr. John Lindahl of Denver has had to discontinue his practice because of illness. He has for sale his office furniture at 435 Mack Block, Denver, and can also turn over a cheap office lease to any doctor desiring accommodations of this kind.

Dr. C. E. Morse of Alamosa has for sale a 2 K. W. Hogan x-ray transformer with accessories on which he will make a very low price. Such a machine would be suitable for general bone work or for a dentist's use.

Dr. J. A. Philpott of Denver, having been honorably discharged from the army, has resumed practice with office at 452 Metropolitan building, specializing in genitourinary diseases.

Major H. G. Garwood of Denver arrived home June 16 and, after spending a two weeks' furlough, returned to Fort D. A. Russell, Wyoming, to be discharged from service.

Dr. W. K. Hotchkiss of Brighton has been honorably discharged from army service and has returned home and resumed practice.

Dr. W. W. Grant of Denver, after a service of twenty months as major in charge of surgical work at Fort Logan, was honorably discharged May 3 and has resumed the practice of surgery, with offices in the Mack Block, as formerly.

Dr. Mary Reed Stratton of Denver announces change of office from 806 Metropolitan building to 302 Majestic building. She will give special attention to ear, nose and throat work.

El Paso County News.

Drs. S. W. Schaefer, L. H. Kinnie, A. C. Magruder, W. H. Swan, C. F. Gardiner, W. F. Martin, G. B. Webb and H. Hoagland attended the meeting of the American Medical Association at Atlantic City.

Dr. W. V. Mullin has received an honorable discharge from the army and has resumed his practice here.

Dr. J. B. Hartwell is attending the A. M. A. and

visiting clinics in New York, Boston, Philadelphia and St. Louis.

Dr. C. F. Stough has returned from a trip to Chicago.

Dr. F. A. Faust is spending his vacation in Estes Park.

Medical Societies

CITY AND COUNTY OF DENVER.

The regular meeting of the Medical Society of the City and County of Denver occurred Tuesday evening, May 20, 1919, with Vice-President Libby in the chair.

The following were elected to membership in the Society: Drs. Harry L. Whitaker, Louis Van Sams, Edwin L. Fitch, William John Bingham, E. P. Hershey, C. H. Willis, Daniel Lucy, Robert Wellington Fraser, George Atcheson, T. F. Long and E. Walter Jenkins.

The scientific program opened with an address upon "The Late Effects of Gas Poisoning as Seen in an Army Hospital," by Dr. J. N. Hall. Dr. Hall first mentioned the usual gases used, which were first chlorine, later mostly mustard or phosgene, and sometimes a lachrymal gas. These gases caused an irritation of the bronchi of a chemical nature and the pneumonias which resulted were of a bronchial type. The x-ray plates showed a peribronchial thickening with an infiltration around the bronchi running out towards the periphery. The infiltration is heavy about the main bronchus where it divides and extends downward towards the base of the lungs. Scattered through the lungs of many cases are seen white spots of considerable density of about one-quarter inch in diameter. Some of the roentgenologists at the camp have thought they were calcified glands. Dr. Hall spoke of another characteristic found in a number of the x-ray plates. It is a drawing upward of the diaphragm as if by adhesions. He thought it probably due to pleural adhesions. The men who have been gassed have a coarse bronchitis without dullness and many of them develop paroxysms of asthma. The characteristic finding of the heart is a dilatation of the right ventricle. Among these gassed men may be seen blisters which are slow to heal, the result of the mustard gas. Among the drugs used are expectorants and iodide of potassium. Dr. Hall mentioned the new gas which the United States was manufacturing at the time of the armistice. It was more deadly than any gas yet used and consisted of a mixture of mustard and phosgene gases. The United States had a great quantity ready for use and were producing two hundred tons a day. Dr. L. G. Crosby said the spots in the lungs of gassed men were in evidence upon the x-ray plates he had seen. He thought possibly the spots were small areas of atelectasis where the bronchi had not cleared up. He also thought that rarely did gassed men show the rousing up of an old focus of tuberculosis. Dr. A. J. Markley spoke of the peculiar anemic appearance and carriage of those who had been gassed. There is a characteristic stoop as if they were too sore to inflate the lungs. He also spoke of the necessity of open air, as they did not breathe easily. Dr. Wm. N. Beggs recounted his experience with a patient who developed asthma as the result of being gassed. Further discussion was by Dr. O. S. Fowler and Dr. Saling Simon. Dr. Simon suggested that the spots in the lungs might be due to the adhering of the bronchioles during the inflammatory stage.

Dr. E. W. Perrott next read a paper upon his "Experiences in the Therapeutic Use of Radium". Dr. Perrott has been treating some patients with radium for the last year or year and a half. These were cases of carcinoma beyond help from any other treatment. He gave the histories of twenty-six cases which he had treated. In the majority of them he found it gave relief from pain, stopped the hemorrhages and caused a better physical condition. In some cases there seemed to be a marked effect for the better on the cancer. He referred to the dangers in its use among which are burns which are hard to heal.

"Radium—Its Emanation and the Use of It." was the subject of a paper read by Wm. A. Schlessinger, Ph. D., who is a physicist. He gave a review of the radio-active substances and their different parts. He said it was a very dangerous substance when improperly used, therefore it was very necessary for one to be thoroughly acquainted with its qualities and to have a correct technic in its use as well as to have an exact knowledge of the proper dosage. He thought it necessary for a doctor who was using radium to ally himself with a physicist and a chemist. Dr. O. M. Shere opened the discussion and emphasized the need of care in handling radium. Dr. Lucy Passover said Dr. Kelly of Philadelphia had given up its use in the cases of sloughing cancerous cervix but had found it of great service in epitheliomas, papillomas of the bladder and leukemia.

MARY R. STRATTON,
Reporter.

EL PASO COUNTY.

The regular monthly meeting of the **El Paso County Medical Society** was held at the library in the Elks' Home on Wednesday, June 11, 1919, at 8 p.m. Dinner was served before the program.

Thirty members of the society and two visitors were present.

The question of building a physicians' building was discussed. Dr. Schofield made a motion that a special committee of three be appointed to gather data from the members of the society as to their feeling toward the matter.

Dr. Lloyd Allen of the One Hundred Forty-first Infantry gave an interesting talk on his experiences in the front-line trenches. Dr. Allen, who spent six months at the front, has recently returned from Fort Sheridan, where he was in the hospital recovering from the effects of being gassed while in action in France. He received his promotion to the rank of major and received the French croix de guerre this month. His citation reads as follows:

"With the approbation of the commander-in-chief of the American expeditionary forces in France the marshal of France, commander-in-chief of the French armies of the east, cites in the order of the army corps Capt. Lloyd R. Allen, One Hundred Forty-first regiment of infantry. A very brave officer. During the attack of October 8, 1918, near St. Etienne-a-Arnes, in spite of violent artillery and machine gun fire, he displayed great audacity, valor and technical knowledge. His example contributed largely to the success of the battle."

"PETAIN."

Dr. Tom Knowles gave a short talk on his experiences in a base hospital in France.

C. E. RICHMOND, Secretary.

WELD COUNTY.

The **Weld County Medical Society** foregathered in extraordinary session Thursday evening, June the fifth, in the office of Drs. Ella Mead and C. A. Ringle. The occasion of this gathering was to officially welcome those who had forsaken home and fireside to enter the medical corps at their country's call. The members of the society were present in force to extend the right hand of fellowship and hear direct tidings from the East.

The scientific program consisted of speeches from the returned veterans outlining the character of their work and explaining the many experiences, hairbreadth escapes, and other features of army life. Drs. Broman, Church, Grantham, Knowles and Woodcock in turn responded and rendered a good account of their stewardship.

After the intellectual portion of the program, the Society turned to lighter things. The chefs in the persons of Drs. Lehan and Spaulding provided an unusual repast after the example of the "Select Order of the Footmen of Bath". This consisted of a leg of lamb with caper sauce surrounded by mountain trout from the Big Thompson. The semisolids and liquids were not by any means neglected, notwithstanding the loud efforts of the guardians of our liberty (?).

After an impromptu recital of "We're Twenty Tonight" (Oliver Wendell Holmes), the meeting adjourned until we meet again.

WILLIAM F. SPAULDING,
Secretary and Recorder.

COLORADO OPHTHALMOLOGICAL.

The regular meeting of the **Colorado Ophthalmological Society** was held in Denver on April 4, 1919; Dr. F. R. Spencer presiding.

D. A. Strickler, Denver, presented four cases of ectopia lentis in the same family, including the mother and three children; there being also a fourth child which was said to have the same defect. Discussed by G. F. Libby, Edward Jackson, F. R. Spencer, and E. R. Neeper.

D. A. Strickler, Denver, presented a man who was suffering from a condition, possibly tuberculous in origin, more or less resembling phlyctenular conjunctivitis. Discussed by W. C. Bane, W. C. Finnoff, Edward Jackson, G. F. Libby, F. R. Spencer, and O. M. Orendorff.

George F. Libby, Denver, made a supplementary report on a case of ocular disturbance apparently connected with nasal sinus disease. A further attack of loss of vision had been overcome by extirpation of the ethmoidal cells and cutting down of the anterior wall of the left sphenoid by Dr. T. J. Gallaher.

George F. Libby, Denver, presented a case of disseminated choroiditis. Discussed by Edward Jackson.

W. C. Bane, Denver, presented a case of iridodialysis (detachment of the iris), from a blow on the eyeball with a whip.

W. C. Bane, Denver, presented a case of hemorrhagic retinitis possibly due to arteriosclerosis. Discussed by W. H. Crisp.

H. R. Stilwell, Denver, again showed a case, previously exhibited, of staphyloma sclerae from injury. The lens was now cataractous.

W. C. Finnoff, Denver, presented a case of acute macular choroiditis. Discussed by Edward Jackson.

J. R. McCaw, Denver, presented a case of congenital buphthalmus. Cataract extraction had been done on one eye.

On behalf of J. W. Lehan, Greeley, the secre-

tary presented a boy of eight or nine years who eighteen months or so previously had become almost blind in each eye. Discussed by Edward Jackson, who suggested syphilitic etiology.

W. H. CRISP,
Secretary.

Book Reviews

Essentials of Surgery: A Textbook of Surgery for Student and Graduate Nurses and for Those Interested in the Care of the Sick. By Archibald Leete McDonald, M.D., The Johns Hopkins University, Formerly in charge of Department of Anatomy, University of North Dakota; Lecturer on Surgery, Nurses Training School, St. Lukes Hospital, Duluth, Minnesota. J. B. Lippincott and Company, Philadelphia. 1919. Price, \$2.00 net.

This book embraces the general principles of surgical conditions, also the surgico-pathological changes. The prominent cardinal signs and symptoms, and a general outline of the principles of treatment, local, dietetic, and medicinal, are set forth briefly but plainly, and in a very comprehensible way.

A close student of anatomy might criticise a few anatomical errors in this work, an example of which is to be found on page 188, the author classifying the anus and rectum as portions of the colon, whereas Gray classifies them as portions of the large bowel. "The large bowel is divided into the cecum, the colon and the rectum"—Gray. The author also names cancer as one of the principal lesions of the small bowel whereas the small intestines are notoriously free from cancer. On page 65, he speaks of acute dilatation of the stomach being caused by a spastic contraction of the esophageal and pyloric orifices. This may be true, but other conditions bring about acute dilatation of the stomach whether contraction of the orifices exists or not. He failed to mention the most common causes, which are operations on the female pelvic organs and gall bladder, severe traumatism as from a blow on the upper abdomen, overloading after a starvation period, etc. He also omitted one of the principal points in the treatment of this condition, which is to turn the patient abdomen downward with pillows under abdomen, rolling the patient slightly but frequently.

On the whole, this is a splendid book for the student or graduate nurse, assuming, however, that he has already been fairly well instructed in anatomy and physiology.

L. J. W.

The Blind, Their Condition and the Work Being Done for Them in the United States; by Harry Best, Ph.D., Author of "The Deaf: Their Position in Society and the Provision for Their Education in the United States". New York, the Macmillan Company, 1919.

(See editorial, "The Blind", p. 161 of this issue of Colorado Medicine.)

Diet in Health and Disease. By Julius Friedenwald, M.D., Professor of Gastro-Enterology in the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, and John Ruhrah, M.D., Professor of Dis-

eases of Children in the University of Maryland and College of Physicians and Surgeons, Baltimore. Fifth edition, thoroughly revised and enlarged. Philadelphia and London: W. B. Saunders Company, 1919. Octavo of 919 pages. Cloth, \$6.00.

Both for those who consider the problem of nutrition of major importance in their practice, and for those who find only an occasional need for specific dietetic suggestions, this pioneer work remains a source of genuine value. The role of a properly balanced dietary not only in the management of diseased conditions, but in convalescence from operations, is appreciated by the profession more clearly than in the days when, even in our best institutions, the selection and the preparation of food in a given case were left entirely to ignorant kitchen attendants.

In this standard treatise, now in its fifth edition, the abundant literature of the past decade has been carefully abstracted, and permanent advances in the science of dietetics have been recorded.

Notable additions appearing in this volume include articles on vitamins, amino-acids, acid and alkali content of food, the relation of food to skin surface, milk standards, food allergy, and Locke's tables of food values.

J. W. A.

An Outline of Genito-Urinary Surgery; by George Gilbert Smith, M.D., F.A.C.S. Genitourinary Surgeon to Out-patients, Massachusetts General Hospital. 12 mo. of 301 pages with 71 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, \$2.75 net.

This monograph of less than three hundred pages contains "an outline of genitourinary surgery," and, "is founded on the experience of the author either in private practice or at the Massachusetts General Hospital". The articles referred to at the end of each chapter have been selected because they represent the views of men of authority upon the subject under discussion.

The book has been written with the idea of presenting to the general practitioner the important points in the symptomatology and pathology of genitourinary diseases. It, therefore, does not exhaustively discuss the conditions, but rather, gives the treatment of genitourinary diseases in so far as it deals with medicine and surgery. It treats minor surgical conditions in full. When major surgery is indicated, enough of the technic is described to give the medical reader an intelligent opinion as to the nature of the operation, its aims and its dangers, but reference is made to other works of authority for complete details.

After a discussion in general of the management of genitourinary diseases, technic, necessary equipment, endoscopy and cystoscopy, diseases of particular organs of the genitourinary tract are taken up more in detail. Many interesting drawings made from actual operations and from pathologic specimens are shown in connection with conditions under discussion.

Certain new notions which are the result of clinical observations, and methods of technic found most practicable in the author's experience are advanced. Case histories either from the author's own private practice or practice at the Massachusetts General Hospital are vividly given and accompany the discussions of the various types of disease.

L. I. M.

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Editorial Comment

GRADUATE MEDICAL TEACHING.

The graduate teaching of medicine was certainly in the air at the Atlantic City meetings. It came up in the report of the Council of Medical Education. It was broached in the House of Delegates. It was referred to in sections of the A. M. A. It was talked about up and down the boardwalk. The president of one of the other societies meeting there explained to the writer how it was proposed to make each state sanitarium a center for teaching physicians the recognition and management of tuberculosis. The accounts of graduate teaching in our army were most interesting and inspiring.

The location of Colorado with regard to graduate medical teaching is peculiar. Denver is a thousand miles from any center in which graduate medical teaching is being done either to the east or the west. If it does not utilize its own resources it is farther removed from opportunities for graduate medical study than any other part of the United States. What the possibilities for graduate teaching are in Denver may be realized when it is remembered that the population of Denver is greater than the combined populations of Bonn (45,000), Freiberg (30,000), Giessen (23,000), Goettingen (17,000), Greifswald (22,000), Heidelberg (35,000), Marburg (20,000) and Rostock (20,000), in which have been situated eight of Germany's university medical schools.

The main difficulty about graduate medical study for the average physician in active practice is to get away from his work long enough. This difficulty may really not

be so great or insurmountable as he may think, but it is real; and it is made much greater for the Colorado physician by the time and expense entailed by travel to Chicago or San Francisco. This applies to the whole region that Denver ought to serve in this matter, a region extending five hundred miles in every direction, and containing four million people and five thousand doctors of medicine.

It is no small matter for a general practitioner in a small town or country district to leave his work among people who are dependent on him and whose loyalty and confidence he must continue to hold, to spend two to four days in railroad travel, meet the expense entailed both in supplying a substitute at home and living in a large city, and then to find that little preparation has been made for his needs in the so-called postgraduate school that he goes to.

Even the exceptional doctor who goes away for a vacation and is willing to take this in a large city is discouraged from taking graduate work when he finds that he can only get what he wants by wasting his precious time in hours of tiresome waiting, and in travel from hospital to hospital.

Denver's business boosters and newspapers make great noise booming her various opportunities for development. But here is one which knocks at the door of every medical school in the country, and is dealing blows of special force in this center of a rich country one thousand miles square, and yet no effort is being made to open the door to it.

Denver has many of the requisites for a great medical center, but two things are lacking—organization to economize the students' time and a teaching hospital. There

is a strange superstition current in Denver, among doctors that do clinical teaching, that they must all have the same office hours, and then all park their automobiles in front of the medical school together and hold simultaneous clinics.

Suppose a doctor desiring to do some graduate study comes to Denver. If he is interested in one branch he can go day after day for an hour to the same clinic. If he wants to brush up on medicine and surgery in general he can go one day to one clinic, the next day to another, and thus make the round once in ten days or two weeks. But in either case he will have twelve or fifteen hours a day to devote to the climate and the movies. So-called postgraduate medical schools have been conducted everywhere with more or less of this disregard of the needs of the student. It does not encourage graduate study.

The need for a teaching hospital in Denver has long been appreciated by all interested in medical teaching. There are hospitals in Denver; and since the days of the votive tablets left at the shrine of Esculapius, there probably never has been a hospital in which something was not learned about medicine or surgery. But when we speak now of a teaching hospital, we refer not to a fifteenth century monastery or an eighteenth century poorhouse; we refer to a twentieth century institution dominated by the purpose of teaching medicine.

That is the purpose which has made the teaching hospitals the most efficient and famous institutions of their class, wherever established. It is a purpose that differs from that of glorifying a church or amassing political influence, and cannot be subordinated to other purposes without losing most of its power to make a hospital efficient and useful. Denver needs such an institution. The recent epidemic demonstrated that for such an emergency Denver's hospitals were seriously inadequate. In the near future new hospital buildings will be erected and equipment provided. It is for the medical profession to decide whether these shall be dominated by the same private, sectarian and political interests as the older institutions, or whether the teaching purpose shall be

adequately represented in the management of our hospitals, new or old. The fact is, the teaching purpose does not exert its proper influence on our hospitals now, and Denver can never be the medical center it might easily become so long as it lacks a teaching hospital.

Those who are working to organize a Presbyterian Hospital in Denver might study with profit the history of the Presbyterian Hospital of Chicago, and the increase of influence, usefulness and success that came to it with its close affiliation with the medical department of the University of Chicago.

The physicians of Colorado greatly need convenient opportunities for graduate study.

The coming meeting of the Colorado State Medical Society might well devote a part of its time to discussing the need for a teaching hospital in Denver, and the bringing before the public the facts that the people's interests would be best served by such an institution. A hospital devoted to teaching does not stop with what it gives the doctors who come for graduate instruction, or with what the staff or internes learn from it; or with the improved methods it should ever be introducing. Its educational influence goes out through doctors who can there do graduate medical study, nurses more broadly and efficiently trained, and patients taught better ways and habits of living, to the whole community that sustains it.

E. J.

A MEDICAL COLORADOANA.

Drudgery is perhaps distasteful to the average active physician, and, more than any other sort, mental drudgery demands the exercise of patience, self-control, persistence and most of the other virtues. One therefore looks with mixed admiration and wonder upon the accomplishment of Dr. C. D. Spivak who has searched out and classified in so complete a way the printed matter of the past which in any way touches the medical profession of Colorado. Only an ingrained knack for literary work, joined with training and experience in it, could tease one into responding to the call for such a record as appears in this issue, a record for which the remuneration is nil and the appreciation apt

to be scant. Dr. Spivak has had no vision of reward other than the satisfaction attending good work. It is known that he has spent the odd hours of several years nosing into tomes, corresponding, interviewing, and making notes, and no doubt this has at times appeared to him to be a sorry, thankless job.

It is regrettable that usually a man must die before his work is duly valued, and that, so far as we know (Sir Conan Doyle and Sir Oliver Lodge to the contrary notwithstanding), he does not taste of the honeyed confection of praise posthumously bestowed. Cannot an exception be made in this case? This issue of *Colorado Medicine* will stand later on as a monument to one who conceived and brought forth a Medical Coloradoana which but for his initiative might have remained forever unborn; but should not some fitting note of appreciation be heard in the present time for an accomplishment which is noteworthy and which no one else was ready to undertake? Shall we allow it to be a thankless job?

MORE WORK FOR A STATISTICIAN.

A first glance at Dr. Spivak's record of articles written by Colorado doctors causes a feeling of elation over the literary fecundity of the authors represented; and then, after sober thought, it becomes difficult to put aside the suggestion that many have talked more than they should, except Me and Thee, and that even Thee may have said a little too much.

Nevertheless, what is written is written, and we shall not seek to separate the chaff from the wheat; and it seems desirable that an index of Colorado medical literature, already so well begun, should be made complete and be continued along in step with further production. There yet remains a considerable volume of work to be done in indexing articles which have appeared elsewhere than in the *Journal of the American Medical Association*, and also all the literature which has appeared in that journal since January 1, 1917.

Such work is really the task for a librarian or other person familiar with the classifying of literature, and it is too much to expect any doctor, even though he may be of a

literary turn, to burden himself with the mechanical details of such an enterprise. It will be remembered that at the last annual meeting of the Colorado State Medical Society a committee was appointed to prepare and offer appropriate suggestions for the celebration of the semicentenary of the society's existence; and it has been suggested to the editor that in this connection the society might well afford to appropriate from any surplus of the funds devoted to *Colorado Medicine*, an amount, not necessarily large, which could be expended for the completion by the library assistants of the Medical Society of the City and County of Denver of the work so ably initiated by Dr. Spivak. The Denver library is the custodian of the books and journals belonging to the state medical society, and is at the same time the only place in Colorado where a medical Coloradoana can be prepared. It is also suggested that the lists, once established, should be kept up to date from year to year, so that the additional list for each year might appear in *Colorado Medicine* as a supplement to the original compilation.

The suggestion is worthy of consideration and may well be brought before the society at the coming October meeting, in order that Dr. Spivak's infant enterprise may steadily develop and not have its young life suddenly cut short.

A FAKE MEDICAL ORGANIZATION.

The issue of the *Journal of the American Medical Association* dated July 5, 1919, which was received in Denver a little too late to be dealt with in the July number of *Colorado Medicine*, contained a lengthy exposure of the personnel of the "Allied Medical Associations of America". It has not been customary for *Colorado Medicine* to devote much space to dealing with professional matters which have already been covered by the *Journal of the American Medical Association*; but this particular topic seems to merit special treatment here, for the reason that one of the principal newspapers of Colorado honored the "Allied Medical Associations of America" by regarding it as representative of the medical profession of the United States.

In an editorial which, having been published on June 20, is now somewhat ancient history, a writer on the staff of the Denver "Rocky Mountain News" saddled the medical profession of the United States with the opinion that beer and light wines were essential for the treatment of certain cases. This opinion had apparently been expressed in a resolution of the "Allied" organization, which by virtue of this resolution obtained a great deal of notoriety throughout the country.

The writer of the editorial in the Rocky Mountain News took pains to discover, from his encyclopedia or elsewhere, that Kraepelin had shown that alcohol decreased mental efficiency; that the investigations of Muller, Wirgin, Laitinen and others had proved that alcohol lowered vital resistance, especially to typhoid fever; that Reuben had demonstrated that alcohol increased the susceptibility to blood poison and pneumonia; that Stewart had proved that even small amounts of alcohol lowered the resistance to tuberculosis; and so on. But, after this amount of careful study of the subject, he became either tired or careless, and adopted entirely without investigation the belief that the organization known as the "Allied Medical Associations of America" was representative and reliable. He asked in the editorial why the members of a profession having charge of the health of the nation, and who should be above suspicion of any kind, went out of their way to indorse an alcoholic drink which they had heretofore condemned. The News writer was probably quite just in his conclusion that the "Allied" organization had permitted itself to be unduly influenced by outside interests. Without, let us hope, appreciating that his own careless editorial was contributing toward the unfortunate result, he expressed the opinion that "the prestige of the medical profession must suffer and the confidence of the people in the integrity and judgment of medical men . . . receive a rude shock". But who are the men so glorified in a Denver newspaper as representing the profession of this great country? The secretary of the so-called "Allied Associations" is a Hungarian who persistently circulates in the St. Louis newspapers extravagant claims

as to an alleged cure for cancer. Its president is an advertising rupture specialist in Detroit. Its first vice president was formerly dean of a mail order diploma mill. Its second vice president is an osteopath. The chairman of its "censors" never graduated in medicine, although he claims to have a diploma from a medical college which the records show to have been fraudulent and to be now extinct. Several other officers whose records are given by the Journal are equally in the class of fakers.

The present writer sent to the News a letter of criticism which was courteously published by the editor, who however offered the excuse that the term "medical profession" was a general one including various schools of medicine, and that hence the editorial was justified. The writer of the News editorial is apparently incapable of appreciating that most of the irregular so called "schools" of medicine are not really schools at all, so far as the teaching of scientific facts is concerned, but merely institutions for the conferring of diplomas upon uneducated individuals who are thus placed in a position to prey upon the unsuspecting public. The least objectionable of the irregulars is the osteopath, whose massage is occasionally beneficial, but whose "system" of diagnosis is preposterous and dangerous in its ignorance of the truth, and concerning whom the best that can be said is that here and there he is devoting more or less profitable attention to the subject of diet, too often neglected by the "regular" physician.

It is, after all, perhaps too much to hope that newspapers will investigate before they pass judgment.

W. H. C.

MEDICAL AGGREGATIONS.

As doctors grow in years and experience there infallibly comes to them the desire to make their work more efficient and at the same time easier. This leads them to go into various experiments, and to hunt assiduously for methods of practice which make for both ease and efficiency. That something will come of this thought no one who is at all optimistic will be inclined to doubt; but whether it will lead to trades-unionism or something akin to it, or to such

group arrangements as will give the individuals comprising the group more freedom, more rest, and better results, remains for demonstration.

It has long been the writer's decided opinion that there is but one way in which to attain perfect ease in the practice of medicine—to quit it. By this master-stroke the cares and worries of practice are at once removed to such a distance that they become unobtrusive and negligible. But, also, all the wisdom of years of hard work is lost, and the loss is really great. The fullness of judgment, the ability to save life, the desire to benefit one's profession, must all be given up. For the physician retiring there has come an end to all things medical; and that means more than most of us are willing to sacrifice.

As we think of the matter the question arises as to whether there is not some middle course which can be followed, whether the practice of medicine cannot be made to have within it such an element of rest and recuperation of the physical and mental man that doctors will live longer, be happier, and be more efficient than ever, and the span of their active life be indefinitely extended.

To some, the aggregation of men of different specialties does not seem likely to result in anything but an attempt to increase the richness of the English language in terms of personal vituperation and applied profanity. At times there may be such associations that have a seeming success; but it is likely to be discovered that they are under the sway and control of an autocrat who virtually has the right to hire and fire his assistants, and that thus the aggregation is as personal in its management as the practice of old Dr. Blisster of Fire-Clay Gulch was in his.

On the other hand it seems entirely possible to form an association of men in the same line of work which would accomplish the results aimed at. And yet it must ever be borne in mind that men differ in personality; that one is pleasing and suave, another brusque and tyrannical, another lacking in some necessary element, and all differing in ability.

That four surgeons, or four internists, or four pediatricians, or four of any other sort,

could get together, sharing offices, and dividing results, working so that one of the four is always on a vacation while the other three are on the job, may be possible. Such an arrangement could be carried out successfully if the four would forget their own peculiar excellencies and superiority and work steadfastly to beget in the public mind a feeling of equal confidence and trust in each member. The three unbroken months devoted to travel, to fishing, or to rest which would come to each member of the association by this arrangement would surely give results in the treatment of cases, for a rested brain is as necessary in medicine as it is in law; and only the politician can work eternally without hurt to himself.

W. M. D.

EMBLEM FOR PHYSICIANS' AUTOMOBILES.

As chairman of the Committee on Emblem for Physicians' Automobiles for both the State and the Denver County Societies, I desire to announce that the emblem designed for, and made on the order of, the trustees of the American Medical Association, is now ready for delivery.

The Denver County Society has directed that emblems for use on the cars of Denver physicians have the word DENVER on the face of the emblem. Physicians elsewhere throughout the State may arrange to have the word COLORADO, or that of any city or town, put upon the emblem if ordered in lots of one hundred or more. Those who desire the emblem without such marking may procure it postpaid by sending \$1.50 to the American Medical Association, 535 N. Dearborn Street, Chicago. If ordered in lots of one hundred, they are somewhat cheaper (\$1.25).

This emblem is an enlarged replica of the button of the American Medical Association without the letters A. M. A., the purpose being to make it an insignia for a doctor's car regardless of his membership in the A. M. A.

The traffic regulations of the City and County of Denver (Section 1973) provide: "**Physicians and surgeon in cars suitably designated**, when on emergency calls, shall

have the right-of-way on any street and through any procession."

Mayor Bailey has quite properly stipulated that privileges under this ordinance cannot be limited to the members of any society, but must be open to all regularly licensed physicians.

It is important to point out in this connection that nothing in the ordinance provides for exceeding the speed limit, and that the use of the emblem will not be regarded by the Commissioner of Safety as an excuse for reckless driving. The limit of speed as fixed by the ordinance is deemed quite sufficient for any emergency. There is nothing to justify endangering the safety of those on the streets in order to reach a patient a few minutes earlier. Reckless driving will not be tolerated, nor will the emblem be recognized as justification for it.

Denver physicians may leave orders for the emblem with the librarian in the Metropolitan Building.

H. G. WETHERILL,
Chairman.

Original Articles

THE CONTRIBUTIONS OF COLORADO PHYSICIANS TO MEDICAL LITERATURE AND THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION AS THE INDEX.*

C. D. SPIVAK, M.D., DENVER.

Definition of Medical Literature. Under medical literature we understand all manuscripts and printed matter which have a direct or indirect bearing upon the science and art of medicine and upon its votaries. Medical literature therefore comprises the following classes:

(A) Literature of all the branches of medical sciences as taught in all the medical schools, including those usually called "irregular".

(B) Literature of all other sciences and arts insofar as they are applied to and have a bearing upon the medical sciences.

(C) Biographies of medical men and of scientists who have contributed to the advancement of medicine.

(D) History of medicine.

(E) The writings of medical men outside of medical science in which the influence of their medical training may be discerned.

(F) General literature which has a specific bearing upon or reference to medicine and physicians.

The Sources. The sources whence such literature may be obtained are to be found in the following:

1. Books, periodicals, monographs, dissertations, reports, illustrations, drawings, portraits, etc., which cover the subjects mentioned in the above classes of literature.

2. All printed matter, records, annual reports, etc., of hospitals, dispensaries, asylums, sanatoria, health resorts, etc.

3. Announcements, catalogs, posters, bulletins, etc., of preliminary, graduate and post graduate medical schools.

4. A collection of all laws adopted by national, state, county and municipal legislative bodies pertaining to the practice of medicine, the preservation of the health of the people, including housing, factory laws for preventing accidents, safety appliances, life, accident and old age insurance, etc.

5. All literature outside of medicine written by physicians.

6. All fiction and poetry in which medicine, physicians and the problems connected with health and healing are discussed.

7. Files of the daily press and periodical literature.

Medical Coloradoana. Although Colorado is a young state and has come into being within the memory of living men, yet the task of gathering a medical Coloradoana such as indicated in the above schema is a tremendous one, and requires incessant search for new material and data and eternal vigilance to preserve the data already gathered.

The Depository. It is fortunate that in our state the foundation for such a collection was laid in the library of the Medical Society of the City and County of Denver. As one who believes that all who benefit humanity should receive a few installments

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

of appreciation during their lifetime, I will permit myself the pleasure of mentioning three gentlemen who have the lion's share in this medical depository.

The Pillars of the Library. First comes Dr. Henry Sewall. He was one of those few surviving pioneers who laid the cornerstone of the edifice, and later he voluntarily imposed upon himself the task of hodcarrier and mason. It is through his hands that the first few thousand books passed, each receiving a hearty welcome and a tender caress.

Dr. Walter A. Jayne came later as a helper and gradually became the library incarnate. He occupies now the same relationship to one library as that of the late Dr. J. S. Billings to the Surgeon General's Library and that of the late Dr. John Chadwick to the library of the Boston Medical Academy. Dr. Jayne is thinking in library terms and is dreaming library dreams. Through his efforts were gathered a collection of books and pamphlets on medical history and a gallery of portraits of medical savants which promise to rival the best collections in the country. Those who are interested in medical Coloradoana will be ever thankful to Dr. Jayne for having gathered under one roof all the minutes and records of a number of medical societies in Colorado, extant and defunct, which if it were not for his timely rescue would have joined the great majority of similar documents in oblivion.

Dr. Edward Jackson is the third of the trinity. He is the literary genius of Colorado medicine par excellence. He is the spiritual pillar of the library. His influence cannot at present be estimated, because it is of the kind that is palpable but not visible.

The Dawn of Medical Coloradoana. If I were asked to name the very first medical author of Colorado, I would unhesitatingly answer that his name is Dr. Edwin James, who accompanied Major Stephen Long on his expedition to the Rocky Mountains. Dr. James was the botanist, geologist and surgeon of the expedition. The mountain that now bears the famed name Pike's Peak should have by right been called James

Peak, for it was Dr. James who first of all men, civilized or savage, set foot on the summit of the Peak, and in recognition of this achievement Major Long recommended that it be named after him. Dr. James left behind him a monumental work. He wrote "An Account of an Expedition from Pittsburg to the Rocky Mountains Performed in the Years 1819 and '20 by Order of the Hon. J. C. Calhoun, Secretary of War, Under the Command of Major Stephen H. Long. 2 Vols. Philadelphia, 1823." The same work with some additions and alterations was published in London in three volumes in the same year. Although this work contains little that is medical in the strict sense of the word, yet it deserves to be classed as medical Coloradoana because of the many observations upon climate, topography, flora and fauna, etc., which have a bearing on medicine, and because the author was a learned and courageous medical man.

For nearly forty years not a trace of other medical Coloradoana could be found. Suddenly we stumbled upon a solitary article in the first volume of the Kansas City Medical and Surgical Review for 1860 entitled "Medical Topography of Pike's Peak Gold Region". The article is signed by the letter "M"*. Another lull follows until we reach the eighties.

The Medical Weeklies and Their Rivalry. In the olden days the new ideas and discoveries in the science of medicine were sought in the bulky tomes. During the last hundred years a physician searches for knowledge in the lean current weeklies and in the bound volumes of periodical literature where everything that is new and progressive is to be found. Medical Coloradoana too is to be sought for principally in medical periodicals.

But much as we are attached to our home produce and value the periodicals published in our state, we must frankly acknowledge that our own medical men who are capable of writing down their observations, discoveries and inventions prefer to have their papers or reports printed in the periodicals published in large cities. The reason is by no means a selfish or vain one. A writer

naturally wants to present his ideas before as large a number of readers as possible. The medical periodicals published in the large medical centers have at all times enjoyed a larger circulation than the periodicals published in smaller medical centers, and of all periodicals published in large centers the weeklies enjoyed a greater circulation than the monthlies.

Now there was a time when the New York and Philadelphia Medical Weeklies vied with each other in their endeavor to reach the greatest number of the medical profession. The war was a long and bitter one. New York finally won the victory. Philadelphia is now for nigh two decades without its own medical weekly. But New York has a rival in Chicago. In the early days of the publication of the Journal of the American Medical Association, New York and Philadelphia weeklies looked down upon the Western upstart edited by N. S. Davis (1883-1890). They did not take the periodical seriously. The J. A. M. A. published mostly the transactions of the annual meetings of the Association and it lacked vim, vigor and pep. Even in its palmiest days under the able editorship of Dr. John B. Hamilton (1893-1898), the total circulation was less than ten thousand. The New York periodicals on the other hand had each probably at that time more than double that circulation. It was but natural that the New York physicians should patronize their own periodicals and that the men from the large and small cities from all over the country should wish to see their articles appear on the pages of the metropolitan medical journals.

Dr. George H. Simmons Blew the Spirit of Life Into the J. A. M. A. In 1899 the Journal of the American Medical Association fell into the hands of a man whose name is destined to go into American medical history as the foremost medical journalist. Dr. Geo. H. Simmons revolutionized medical journalism. He was not afraid of innovations. He introduced new forms, new type, new departments. He originated many new ideas, and he was not too proud to borrow and incorporate good and useful features wherever he saw them. In short, Dr. Sim-

mons blew the spirit of life into the nostrils of the Journal of the American Medical Association. The number of readers increased, the number of advertisers multiplied. The journal became a prosperous concern, a "big business". Nothing succeeds like success. Those who scorned the idea of having their names associated with the plebeian periodical published in the wild and woolly west, sat up and took notice, and then flocked to the Journal with their contributions. For who is so blind as not to see that a circulation of a periodical which is rapidly nearing the one hundred thousand circulation mark is a better medium than that of any medical publication in this country, the circulation of the best of which never exceeded twenty-five thousand copies? The increase in the number of contributions from various medical centers is significant. An examination of the number of contributions from various large cities to the J. A. M. A. in 1898 and twenty years later, in 1917, will disclose the fact that Baltimore contributed thirteen articles in 1898 and twenty-seven in 1917; Boston contributed thirteen in 1898 and thirty-eight in 1917; Cleveland, six articles in 1898, and sixteen in 1917; Pittsburg, five in 1898 and twelve in 1917; Rochester, two in 1898 and nineteen in 1917; San Francisco, seven in 1898 and twenty-one in 1917. The only great medical center which has shown a falling off quantitatively is the city of Philadelphia, which was represented in 1898 by ninety articles and in 1917 by thirty-three articles. A most curious phenomenon is the contrast in reverses between the two rival cities, New York and Chicago. Whereas in the beginning of the contest in 1898 Chicago contributed one hundred and twenty-two articles and New York gave stingily only one third that number, forty-five articles, the tables have turned in 1917. Chicago contributed only ninety-nine articles and New York contributed one hundred and thirty-four articles.

No matter to what special and dignified publication one has the entrée, he will want now and then to have his name published under or over an article in the J. A. M. A. Moreover, I make the assertion that the com-

parative standing of the medical centers in this country may be safely arrived at by taking into account the number of the contributions to the Journal. Of course, I know very well that a great discovery may be published in a one-column article, and there may be nothing new in a twenty-page, profusely illustrated rehash. Nevertheless, quantity is an important element and counts for a great deal. The greatest medical center is there where the most numerous and more voluminous writers are found.

From the above considerations it is evident that the Journal of the American Medical Association is considered by the medical profession as the foremost medical publication in the United States.

The Colorado Medical Débutants. The Colorado physicians being human, they too have published their contributions first in the weeklies published in New York and Philadelphia and later mostly in the Journal of the American Medical Association. The first Colorado author to appear in the Journal was Dr. Charles Denison in 1885 on the subject of the Stethoscope. Dr. Denison wrote continuously for the Journal, his last article appearing in 1897, entitled "The Sleeping Canopy". In the year 1887 appeared an article on pneumonia in high altitudes by J. W. Brown of Silverton, Colo. In 1889 Dr. S. Edwin Solly of Colorado Springs made his appearance. In 1890 Dr. T. G. Horn of Colorado Springs recited his piece. In 1893 eight Colorado men made their début, among whom are Drs. Eskridge, Bane and Levy. In 1894 Drs. Hall, Munn and Parkhill are introduced. In 1895 Drs. Edward Jackson, Powers and Axtell came upon the stage. In 1896 Drs. Lemen, Freeman, McLauthlin and Stover made their initial bows. In 1897 Drs. Wetherill, Holmes and Hawse made their maiden speeches. The year 1898 is the banner medical year in Colorado, as far as the abundance of a crop of new authors and literary output is concerned. The American Medical Association held then its annual conclave in Denver and the medical men of Colorado were all aglow with enthusiasm and were stricken with graphophilia, vulgarly known as writer's itch. The following names appear for the

first time in the Journal in 1889: Drs. Hawkins, Grant, Foster, Sewall, Robinson, Tyler, Boyd, Bonney, Rover, Thompson, Fisk, Bulkley, Horn, Beggs, Miel, Sears, Melville Black, Blaine, T. Mitchell Burns, Roseberry, Whitney, Rothwell, Kickland and Spivak, in all twenty-four new writers. The total number of articles by Colorado physicians which appeared in the Journal in 1898 numbered fifty-three, a trick which has never been repeated since. It is very gratifying to note that the average number of articles published annually by Colorado physicians in the Journal during the last twenty years amounts to twenty, the year 1917 showing the least number and not a single new author.

From 1885, when the first article by a Colorado physician appeared in the J. A. M. A., until 1917 there were published five hundred and twelve articles from the pens of the members of the medical profession in Colorado. Every branch of medical science is well represented. The number of articles on tuberculosis is, as it should be expected, quite respectable, but the articles on surgery lead the list. I have already mentioned that I am concerned now with the quantitative side of the problem. How much have the Colorado physicians contributed to medical periodical literature, limiting my inquiry for the present to the J. A. M. A., the representative organ of the medical profession of the United States? I have gathered a great deal of material concerning the contributions of Colorado physicians in a dozen other medical publications. After the question of "how much" is answered, then will naturally arise another and a harder task of making a qualitative analysis. The grain will have to be separated from the chaff by careful winnowing. The original ideas will have to be separated from the spurious. I doubt whether I can deal satisfactorily even with the question of quantity, which is mostly mechanical. I am sure I cannot undertake to pass judgment upon the quality of the vast medical literature produced by Colorado physicians during the last half a century.

I believe no one individual is capable of doing this work. This should be entrusted

to committees composed of specialists whose duty it shall be to examine carefully all the literature in their respective specialties and point out the original contributions.

I beg to append the following lists:

(A) Early Medical Coloradoana, Periodical Literature.

(B) Medical Coloradoana, Books.

(C) Medical Periodicals Published in Colorado, Extinct and Current.

(D) Catalogs and Announcements of Colorado Medical Colleges.

(E) Alphabetical List of Colorado Physicians who contributed to the Journal of the American Medical Association from 1885 to 1917, giving title of article, volume, year and page.

(F) Miscellaneous references to Colorado, editorials, reports of medical meetings, etc., in the J. A. M. A., from 1885 to 1917.

(G) List of Colorado contributors classified by the year in which they made their first appearance in the J. A. M. A.

(H) Number of Articles by Colorado Physicians published annually in the J. A. M. A.

If the study of medical history in Colorado will be furthered by my present contribution I will consider myself well repaid for my effort.

206 Metropolitan Building.

*The letter "M" under the article, Medical Topography of Pike's Peak Gold Region (Medical and Surgical Review, March, 1860, Vol. I, No. 3), appears from analogy to stand for G. M. B. Maughs, M.D., editor of the Kansas City Medical and Surgical Review, as in the issue dated January, 1860, Vol. I, No. 1, the first article is entitled, "The Medical Topography of Kansas City and Adjacent Country, by G. M. B. Maughs, M.D." We quote from the former article the following interesting passages:

"To the asthmatic and those laboring under a tubercular diathesis, no part of the globe promises more than this region. The purity and dryness of the atmosphere, and its diminished diet, incident to a mountain life, together with uniformity of temperature, are hygienic conditions most favorable to this class. These theoretical views are fully corroborated by statistics. Among all the Indian tribes inhabiting this tableau, tubercular consumption is almost unknown. The Government troops stationed at the different posts, and the army of traders and trappers that have peopled this region for the last half century, have enjoyed a like immunity from this fearful scourge of our race.

"Our advice, then, to this class would be to discard drugs and doctors, and leave the crowded cities where the damp, heavy atmosphere, loaded with impurities, counteract any good effect produced by medication; and forsake seacoasts and watering places—the common graveyards of con-

sumptives—and spend a season at Pike's Peak—not necessarily in searching for gold, but in chasing deer, antelope and bear, and living upon their flesh, more particularly the latter, whose fats consumed in this elevated mountain home are worth all the Oleum Jecoris, Cod Liver Oil, in the world. Here, and here alone, we verily believe this mournfully interesting class of patients will find the long-sought elixir vitae. It gushes out from every lofty mountain summit scaled by the invalid, is imbibed with every inspiration, hovers around every rude campfire, and is taken with every trophy of the invalid's gun made upon this lofty tableau." (p. 123.)

He closes the article with the following warning:

"As the intention of this article is to benefit the many, we cannot close the medical part of it without another warning to the multitude, who will here, perhaps for the first time in their lives, be thrown off from the restraints of home. The road to death and ruin you will here find broader and better trodden than ever before; avoid, therefore, as you would the leprosy, late hours at the gambling hells, and the use of bad whisky. The one is a den of thieves, among whom the chances are a thousand to one against you; and the other is a poison—manufactured by traders from alcohol, tobacco, cocculus indicus, and other narcotics—and may produce immediately fatal effects. We do not say that all the whisky and other liquors that will be vended at Pike's Peak will be of this nature, but that much, very much, of it will, there is no doubt; and as you cannot be certain in any instance that it is not, and as it is not necessary that you should use it at all, safety is in total abstinence." (p. 125.)

DISCUSSION

William H. Crisp, Denver: Mr. President: I venture to take the liberty, without previous consultation with yourself, to devote my time on this subject to mention of some of the things which you have done in medical literature. I should like also to take the liberty of referring to you in the third person, instead of addressing you in the second.

On account of Dr. Jackson's innate modesty, very few of you know anything about what he has done in the special literature of ophthalmology and in bringing before the world the records of what has been done in that specialty.

In 1903 he conceived the idea that it was desirable to publish a yearly digest of the ophthalmologic literature of the whole world. The first volume of the Ophthalmic Year Book, the publication which carried out this idea, appeared in May, 1904. It consisted of about two hundred and fifty pages, and was prepared entirely by Dr. Jackson. In later years help was obtained from a number of ophthalmologists in different parts of the world, including such men as Drs. George de Schweinitz and T. B. Schneideman of Philadelphia (these two sharing for a time with Dr. Jackson the expense of publishing the year book); several of our Denver eye men; Casey A. Wood of Chicago; R. H. Elliot of London, England; and Marcus Feingold of New Orleans. Each year the Year Book gathered together all that could be reached of the special journals on the eye and of the general journals of the world which contained articles on the eye. It was published year by year almost without exception until about a year ago. Some of its later volumes contained about five hundred pages each. It attempted not merely

to mention all the papers that were published on the subject of ophthalmology throughout the world so far as they were accessible, but to digest this matter in readable form, setting forth the essential points mentioned in the papers. To show what a tremendous task this was I may mention that the bibliography of the papers mentioned in one of the larger volumes of the Year Book covered about seventy pages. The financial difficulties of publishing such a volume were increased by the fact that the circulation was necessarily limited, because the men who are enterprising enough to subscribe to such a volume are relatively small in number. However, the Year Book was subscribed to by leading men not only in this country but in various parts of Europe; and in years to come this publication will be more and more valuable, and will stand as a monument to Colorado and to the medical profession of this state.

The Year Book has been replaced by an even larger enterprise, at present also conducted by Dr. Jackson. The European war brought about an amalgamation of several Italian eye journals into one larger publication, and later on the same thing happened, only more completely, in England. Dr. Jackson was struck with the idea that this process should also be applied to the United States. At that time we had a number of eye journals, some monthly and some quarterly. After a year of agitation of the project and of correspondence between the different parties concerned an agreement was arrived at to publish the American Journal of Ophthalmology. This new journal, which took the place of five previously existing eye journals, and also incorporated with itself the Ophthalmic Year Book and Ophthalmic Literature (a monthly list of the literature of ophthalmology, also published for some years past by Dr. Jackson), has been published monthly since January of this year (1918). It is a journal of one hundred pages monthly, one hundred double-column pages, fairly closely printed; and is a very considerable undertaking. The demands made up on the medical profession by the war have thrown the major part of the burden of publishing the new journal upon Dr. Jackson's shoulders.

President Jackson: The remarks of Dr. Crisp will very likely give a twist to this discussion of what will be most interesting to the members of the society in general regarding the earlier work in the medical literature of Colorado.

Edmund J. A. Rogers, Denver: Dr. Spivak's paper was very interesting. He makes one important omission. I do not intend to detract in any way from the triumvirate, but he has not admitted or included the work he did himself. Dr. Spivak was the backbone for a long time of the analyzing and classifying of medical literature in Colorado. His own journal, the Colorado Medical Librarian, was circulated all over the country, and I think was considered almost a model for a medical librarian's work, and although he did not do a great deal of individual medical writing, he did some, but his labor and his efforts were inexhaustible, and his paper today should not be published without his own name being attached as one of the original workers.

As to Dr. Jackson's own case, I will tell you a little incident. About fifteen years ago, when mostly members of a certain society were talking in the East, a foreigner turned to me and said in speaking of medical literature in America, "There is no man so well known in Europe as one of your Colorado men." I said, "Who is he?" He replied,

"We who are interested in medical literature, all know Dr. Edward Jackson."

President Jackson: Dr. Sewall could tell us some interesting stories about Colorado medical literature if he feels inclined to do so. The chair would like to hear from him.

Henry Sewall, Denver: Unfortunately, I did not hear Dr. Spivak's paper. I do not know what he said, but there comes to my mind the name of a man who was one of the literary pioneers in our profession, and I have no doubt Dr. Spivak has given him full credit in his paper, namely, Charles Denison. His "Rocky Mountain Health Resorts" was the first contribution to be appreciated by the public in this country, and I have noticed in reading the literature that Denison's name is not mentioned at all. Denison, of course, was a denizen of other times and would not stand with the battlefield of scientific medicine today, but he in his time was indispensable and he talked to the people of his time on a level with their appreciation and comprehension, and I have no doubt that our position today is founded very largely on such a foundation as he laid.

I am a little embarrassed in being asked to discuss this subject because I do not really know the tenor of the discussion. I feel, however, that Dr. Spivak's idea to establish and put on permanent record the work of the best men is of fundamental importance. I would like to take the time to think of some of the men who have furnished valuable contributions to the literature of medicine in Colorado. There is one man, B. P. Anderson, in Colorado Springs, who wrote papers on the intermediate altitude twenty-five years ago which were of considerable value.

I heartily endorse the idea that it is a good thing for us to turn occasionally to the history of our subject in order to make it plain how we reached the present.

Leonard Freeman, Denver: Dr. Spivak in his extremely interesting paper mentioned Dr. Edwin James as the first doctor who wrote on medical subjects in this part of the country. I wonder if that is true?

Nearly four hundred years ago Texas was inhabited mostly by Indians, mosquitoes, rattlesnakes and horned-toads. A lot of Spaniards were wrecked in a rowboat on the southern coast of Texas, in a hurricane similar to the one that destroyed Galveston some years ago. They lost everything they had—munitions, clothing, food, everything. Out of a larger number only four survived. Cabeza de Vaca, who was one of them, wrote a journal of his extraordinary experiences. Among other things, he said he often had to carry a firebrand with him during the day so that at night he could dig a hole in the ground, surround it with a brush fire and sleep within this protection to keep off the mosquitoes. After a number of years, during which they were starving, and slaves to a lot of starving Indians, the Indians conceived the idea that these poor wandering outcasts, naked, sunburnt, mosquito-bitten, emaciated and with long beards, would make good doctors; perhaps, because they were not of much use for anything else. So they picked out these men to become doctors, in spite of their protests, and without diplomas and without examinations they entered the profession. Their methods were simple. They cured people by the laying on of hands and making crosses on the chest and praying that they would get well. Their success was phenomenal. Everybody got sick, apparently, and everybody got well. Their practice grew by leaps and bounds until the Indians of the surrounding country, not only in Texas, but in lower Colorado,

Arizona and New Mexico, flocked to them. Just as soon as they were treated, they imagined they were well. The wonderful thing was that they paid their bills promptly. They did not have to be dunned or solicited, but gave everything they had, and went out among their friends and got more. The result was that these men, instead of remaining poor, emaciated wanderers, became fat and rich. They marched across the country to the Spanish settlements, going possibly through southern Colorado, through New Mexico and through Arizona with a crowd of followers.

These Indians were not all fools. Some of them were very intelligent citizens, and they conceived the idea that these doctors could be utilized for commercial purposes. So they organized a sort of open stock company in which membership was to be obtained by putting in everything one had and following in the wake of the doctors. They sent advertising agents ahead, who would go into a town and drum up the trade. Their motto was "no pay, no cure", so that the fees were all collected in advance. Bows, arrows, blankets and many other things were obtained, until the booty was so great that they could not carry all of it with them, and so destroyed half of it by burning. I desire to call the attention of the Society to the journal of Cabeza de Vala as being the first Colorado medical literature.

Dr. Spivak (closing): I have tried to convey the idea that the Journal of the American Medical Association may serve as a criterion by which to judge the various medical centers throughout the country, and I think I am not far from being right. Of the best medical journals in the United States, there are none without their shortcomings. There are no great men in this country, who have done and are engaged in research work, who do not want their articles published in the Journal of the American Medical Association. Therefore, it is the kind of place or medium through which all great men must pass, and it will serve as a criterion. It is well, therefore, that Colorado physicians are very well represented in the last twenty years in the Journal of the American Medical Association. (Here Dr. Spivak read extracts from an article on "The Medical Topography of Pike's Peak Gold Region", signed "M".) This article was written over sixty years ago.

The author of this article gives a very fine description of the country surrounding Pike's Peak from a geographical standpoint. He talks about all of the vegetations of the country and in his article he makes the statement that "rheumatism is prevalent here, as well as pleurisy and pneumonia."

I appeal to the Colorado State Medical Society to take up this matter of the medical history of Colorado. There is no other body of men capable of doing it. Shall we do it as a state society, or shall a committee be appointed for this purpose? I have suggested that many committees could be appointed throughout the state covering the various branches of medical science. Each of these committees could work up the literature. I think we have it all. I have collected not only the titles of articles printed in the Journal of the American Medical Association, but I have covered the ground very thoroughly, and it can be covered later by other writers. Each one could go over his own writings to see whether some contributions have been omitted.

I wish to thank the members for the free discussion and marked attention they have given this subject.

Results of Tuberculin Treatment at Loomis Sanatorium.—Bertram H. Waters and Andrew Peters, Jr., give the status of one thousand sixty-seven patients in December, 1917, who had been admitted to the main division of the Loomis Sanatorium between December 15, 1906, and December 15, 1912. Their analysis is mainly a comparison of the ultimate condition of those patients who had received only general sanatorium treatment with those who in addition received tuberculin therapy. They conclude that while there appears to have been some advantage in expectation of life for patients with well advanced types of lesion, who received tuberculin, the factors of selection and longer sanatorium residence render its significance in relation to specific treatment doubtful; that all things considered their study does not furnish any very impressive evidence of the value of tuberculin as a therapeutic agent in pulmonary tuberculosis; that, even with careful selection, administration and observation, certain definitely unfavorable results were noted during treatment which could not be wholly dissociated from causal relation so far as tuberculin was concerned; and that apparently the sputum of more patients who received tuberculin became bacilli-free than those who had not been thus treated—*American Review of Tuberculosis*, Vol. III, No. 1.

EVERY EFFORT IS BEING MADE BY THE ENTERTAINMENT COMMITTEE TO TAKE CARE OF THOSE WHO ATTEND THE STATE SOCIETY MEETING OCTOBER 7, 8, 9, AT DENVER. WILL YOU BE THERE?

The United States Pharmacopoeial convention of 1920 will mark the first century of the Pharmacopoeia and be the most important of the decennial meetings. The members, in addition to the incorporators and their associates, shall be delegates elected by the following organizations in the manner they shall respectively provide: Incorporated medical colleges and medical schools connected with incorporated colleges and universities; incorporated colleges of pharmacy, and pharmaceutical schools connected with incorporated universities; incorporated state medical associations; incorporated state pharmaceutical associations; the American Medical Association, and the American Chemical Society; provided that no such organization shall be entitled to representation unless it shall have been incorporated within and shall have been in continuous operation in the United States for at least five years before the time fixed for the decennial meeting of this corporation.

The Toll of the Nurses.

A sacred constellation of one hundred and eighty-four gold stars on the service flag of the American Red Cross Department of Nursing at Washington is the silent token of the supreme sacrifice made by that number of American nurses. The record is still incomplete and when this roll of honor is finally closed it is probable that the names of fully two hundred American women who have laid their lives on the altar of freedom will have been inscribed upon it.

REMEMBER THE TIME OF THE STATE SOCIETY MEETING—OCTOBER 7, 8, 9, DENVER.

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Denver Medical Times, a monthly periodical of medical, surgical and obstetrical sciences. Thomas H. Hawkins, editor and proprietor; F. Marquand Trask, associated editor, Vol. 2, 1882, to Vol. 34, 1915. Title of Vol. 1 was The Rocky Mountain Medical Times, Vol. 2. Complete in six numbers, January to June. Vols. 3 to 8 commenced in July, continued as the Western Medical Times. (Editors: Vol. 1, J. H. Hawkins and F. A. E. Disney; Vol. 2, J. H. Hawkins and F. M. Traska; Vol. 3-5, J. H. Hawkins; Vol. 6-11, J. H. Hawkins and P. D. Rothwell. Vol. 12; J. H. Hawkins and E. C. Hill; Vol. 13, W. P. Munn and John Chase; 14-15, J. H. Hawkins; 26-33, E. C. Hill and T. E. Carmody.)

Health Monitor. Edited and published by C. E. Bryant (et al). No. 1, Vol 1, Sept. 15, 1889.

Gross Medical College Bulletin. Carey Kennedy Fleming, Editor. Nos. 1-6, Vol. 2. Jan. to June, 1894 (must be 1893 first).

Denver (The) Journal of Homeopathy. Editors: S. S. Smyth and S. S. Kehr, Vol. 1-3, Oct., 1894, to Sept., 1897. Continued under the title: The Critique.

Colorado Climatologist and Denver Medical News. A monthly magazine for the study of climatology and a report of the Medical Society News. Edited by Charles Manly and J. N. Hall. Vol. 1, Nov., 1894, to Oct., 1895, South Denver, Colo. Ended in 1896, followed the Colorado Medical Journal.

Colorado Medical Journal. A scientific Medical

Journal published in the interest of the profession of the great west. Edwin R. Axtell, Editor. (Monthly.) Vol. 2-13, 1896-1907; Vol. 1 under title: The Colorado Climatologist and Denver Medical News. Ceased. (Editors: 1896-1899, E. R. Axtell; 1900-1905, W. N. Beggs; 1906-1907 (Jan., Feb., Mar.), T. Mitchell Burns.)

Homeopathic Hospital Envoy: Devoted to the interest of the Denver Homeopathic Hospital (monthly). Nos. 1-4, 1896-1902.

Critique (The). Edited by Samuel S. Smyth (monthly). Vol. 4-14, Oct., 1897, to Dec., 1907, Denver, Colo.; Vol. 1-3 under title: The Denver Journal of Homeopathy, Vol. 5 commenced January, 1898.

Western Medical and Surgical Gazette. Editor, Wm. N. Beggs and Lincoln Mussey (monthly). Vol. 1, Nov., 1897, to Sept., 1898. Ended.

Medical Libraries. Devoted to the interest of Medical Libraries and bibliography. Edited by C. D. Spivak (monthly). Vol. 1-5, Feb., 1898, to Dec., 1902, Denver, Colo.

Transactions of the Rocky Mountain Intra-State Medical Association. Reprinted from the Denver Medical Times, Vol. 1-6, 1899-1904.

Medical Liberty. A critical monthly journal giving the views of eminent doctors and revealing the frauds and tricks of the quacks and fakers in the medical profession. Vol. 1-2, Dec., 1901, to Dec., 1902. Denver, Colo. Ended.

Colorado Medicine. The official organ of the Colorado State Medical Society. Edward Jackson, Editor. (Monthly.) Nov., 1903. Current. Editors for the following years: 1904, Edward Jackson; 1905, Edward Jackson; 1906, J. M. Blaine and George A. Moleen; 1907, George A. Moleen; 1908, George A. Moleen; 1909, Henry S. Denison and George A. Moleen; 1910, Henry S. Denison; 1911, Leonard W. Ely; 1912, Charles S. Elder; 1913, Charles S. Elder; 1914, Charles S. Elder and William H. Crisp; 1915, William H. Crisp; 1916, William H. Crisp; 1917, William H. Crisp.

The Ophthalmic Year Book. Edited by Edward Jackson and Geo. E. De Schweinitz. Vol. 1, 1904; Vol. 13, 1916, Denver, Colo. (Editors: Vol. 1, Edward Jackson; Vol. 2-4, Edward Jackson and Geo. E. De Schweinitz; Vol. 5-6, Edward Jackson, Geo. E. De Schweinitz and T. B. Schneideman; Vol. 7-8, Edward Jackson, T. B. Schneideman and William Zeutmayer; Vol. 9-13, Edward Jackson.)

Denver Medical Times and Utah Medical Journal. Title: after April, 1906, of Denver Medical Times.

The Sanatorium. Official organ of the Jewish Consumptives' Relief Society. Vol. 1, 1907. (Editor, P. Hillkowitz, Vol. 1-5; C. D. Spivak, Vol. 1-11.) Current. Bi-monthly.

Denver (The) Medical Bulletin. Published by the Medical Society of the City and County of Denver. (Weekly.) Vol. 1, No. 1, March 4th, 1911. Denver, Colo. Current.

MEDICAL COLLEGES.

University of Colorado Medical Department, Boulder. Catalog and circulars of information for the sessions of 1884-1885, 6-7, 8-9, 91-2, 93-4.

Gross Medical College of Denver. Medical Department of the Rocky Mountain University. Annual Announcements for the Sessions 1887-8, 88-9, 91-2, 92-3.

University of Colorado School of Medicine, Boulder. Annual Announcements for the sessions of 1894-5, 5-6, 6-7, 7-8, 8-9 (1894-1913).

University of Denver and Colorado Seminary. Annual Announcements for sessions of 1882-3 to 1887-8, 1889-90 to 1893-4; 1907-8.

MISCELLANEOUS REFERENCES TO COLORADO MEDICAL NEWS, EDITORIALS, REPORTS OF THE MEDICAL MEETINGS, ETC., IN THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

XXI, 1893, p. 783. Climates of the United States. Popular edition of Denison's charts with additions.

XXXI, 1898, p. 82; XXXI, 1898, p. 194; XXXI, 1898, p. 297; XXX, 1898, p. 1187; XXX, 1888, p. 1481; XXX, 1898, p. 1430; XXX, 1898, p. 95 and p. 123; XXXVIII, 1902, p. 1164. (Editorial) Colorado's Attitude Toward Consumptives.

XXXIV, 1900, p. 301. Colorado and Quackery. (Quackery.)

XXXVII, 1901, p. 222. Climate of Colorado. (Current Literature.)

XXXV, 1903, p. 269. The Colorado Climate. (Current Literature.)

XXXV, 1900, p. 123. Colorado Climate and Sleep. (Medical Literature.)

XLIV, 1904, p. 1211. New Colorado Medical Act.

XXXVI, 1901, p. 1133. Colorado Medical Library Association.

XXXX, 1903, p. 1670; XXXX, 1903, p. 1096; XXXXII, 1904, pp. 189, 1095; XLV, 1906, p. 1222; XXXIX, 1902, p. 274; XXIII, 1898, p. 809; LII, 1909, p. 1355. Medical Economics, Colorado. LV, 1910, p. 1986. Medical Education in Colorado.

LII, 1909, pp. 1863, 1523. Medical Education in Colorado. XV, 1890, Sept. 2-4, p. 196. Programme of the meeting of the American Climatological Association. Held in Denver.

XXXX, 1903, p. 187. Southern Colorado Medical Association. XXIX, 1897, Western Surgical and Gynecological Association, p. 1233. XXXX, 1903, pp. 1513, 315, 788, 653, 1387.

XXXV, 1900, p. 35. (Editorial) Consumption in Colorado. 1888, 1891, p. 492. Col. T. T. Crane elected treasurer of National Association of Military Surgeons, National Guards of U. S.

XXXVI, 1901, p. 1412. Denver Clinical Society.

XXX, continued 1898, p. 451. Denver Medical Library Association, Denver and Arapahoe Medical Society Meetings. XXX, p. 1243, 1898, Denver meeting Medical Librarians. XXXIV, 1900, p. 749. Denver Ophthalmological Society. XLIII, 1904, p. 1821. Therapeutic Value of Colorado Climate (current literature), 1895, p. 139; In the Microscopic Examination of Blood Stains.

XXXIV, 1900, p. 626 (editorial), Reporting Births. XXVII, 1896, p. 365. Physicians With Sero-Therapy in Tuberculosis. XXIV, 1900, p. 500. Regulation of Marriage. XXXIII, 1899, p. 413-481. Rocky Mountain Interstate Medical Association.

Colorado State Board Reports.

LIV, 1910, p. 1556; LV, 1910, p. 333; LV, 1910, p. 796; LVI, 1911, p. 1596; LVI, 1911, p. 291; LIX, 1912, p. ?; LVIII, 1912, p. 1529; LVIII, 1912, p. 807; LVIII, 1912, p. 884; LIX, 1912, 1567; LX, 1913, p. 1728; LX, 1913, p. 930; LXI, 1913, p. 1480; LXI, 1913, p. 1480; LXI, 1913, p. 2090; LXIII, 1914, p. 1972; LXII, 1914, p. 1040; LXIII, 1914, p. 266; LXV, 1915, p. 47; LXV, 1915, p. 973; LXVII, 1916, p. 144; LXVII, 1916, p. 898; LXVII, 1916, p. 232; LXVI, 1916, p. 52.

Colorado State Medical Society.

XXIII, 1894, p. 39; XXXIII, 1899, p. 288; XXXV, 1900, pp. 46, 447, 584, 577; XXXIX, 1902, pp. 157, 328; XXXXI, 1903, pp. 982-1290; XXV, 1895; XXIV, 1895, p. 1023; XXXVII, 1901, p. 137; XLVII, 1906, pp. 1320, 1430; LVII, 1911, p. 829; LVI, 1912, p. 2093; LXV, 1915, pp. 1469, 1582, 1672.

Denver and Arapahoe County Medical Society.

XXIX, 1897; XXXI, 1898, p. 71; XXX, 1898, p. 283; XXXII, 1899, p. 426; XXXII, 1899, p. 545; XXXII, 1899, pp. 661, 825, 937, 1179, 1322; XXXII, continued 1899, p. 309; XXXI, 1899, p. 239; XXXIV, 1900, pp. 361, 689, 1416; XXXIV, 1900, p. 633; XXXV, 1900, pp. 1046, 1168, 1652; XXXVII, 1901, pp. 1414, 1629, 1696; XXXVI, 1901, pp. 400, 402, 522, 756, 907, 985, 1417; XXXVIII, 1902, pp. 346, 838, 1030.

Medical Schools of Colorado.

XXXI, 1903, p. 436; XXXXIII, 1904, p. 489; XLVII, 1906, p. 614; XLIX, 1907, p. 576; LIV, 1910, 1566; XLIV, 1904, pp. 1214, 1218; LX, 1913, pp. 780, 863; LVI, 1911, p. 1741; XXIX, 1897, p. 928; XXIII, 1894, p. 527; XXIII, 1894, p. 543; XXVII, 1896, p. 625; LI, 1908, p. 576; XLVIII, 1907, 2199.

Colorado Medical News.

XXXIV, 1900, p. 762. Medical News, Denver Insane Asylum.

XXXIV, 1900, p. 827. Fumigation of Pullman Cars. Medical News, Denver. Insane Asylum.

XXXV, 1900, pp. 441-694, 756-830, 956-1034, 1268-1354-1635; XXXVI, 1901, pp. 41, 330, 451, 821, 1123, 1403; XXXVII, 1901, pp. 119, 520, 706, 840, 919, 1121, 1256, 1324, 1540, 1684; XXXVIII, 1902, pp. 590, 1087, 1237, 1377; XXXIX, 1902, pp. 1262, 24778, 13981642, 204; XXXXI, 1903, pp. 318, 729, 1278; XXXXII, 1904, pp. 40, 472, 776, 1149, 1225; XXXXIII, 1904, pp. 614, 474, 1152, 1707; XLIV, 1904, pp. 1786, 1375, 1042, 224, 798; XLV, 1905, pp. 638; XLV, 1905, pp. 1806, 1504, 1332, 859, 1173, 1254, 1877; XLVI, 1906, 1702, 1292, 517, 888, 1117; XLVII, 1906, 784, 598, 42, 279, 368, 944, 1195, 1384, 1494, 2059, 2164; XLVIII, 1907, pp. 2191, 1356, 232, 114, 1190, 1787; LIX, 1907, pp. 2092, 1780, 780, 151, 333, 1373, 49; L, 1908, pp. 755, 537, 370, 1198, 2140, 1129; LI, 1908, pp. 1161, 1087, 324, 505, 680; LII, 1909, pp. 779, 709, 55, 390, 478, 1431, 1933, 2000, 1671; LIII, 1909, 2107, 563, 1406, 2083, 2165, 876; LIV, 1910, pp. 712, 138, 295, 542, 1315, 1550, 2127; LV, 1910, pp. 35, 319, 409, 869, 1032, 1207, 1478, 1652, 1815; LVI, 1911, pp. 555, 674, 750, 1116, 1270, 1486, 1728; LVII, 1911, pp. 225, 569, 661, 829, 1141, 1295, 1544, 1844; LVIII, 1912, pp. 1123, 944, 123, 201, 183, 562, 866, 1863, 1959; LIX, 1912, pp. 452, 551, 659, 810, 886, 1384, 1726, 1980; LX, 1913, pp. 292, 1083, 1368, 1548, 1967; LXI, 1913, pp. 286, 876, 972, 1384, 1726, 1820; LXIII, 1914, pp. 172, 250, 328, 874, 1212, 1305, 1400; LXII, 1914, pp. 784, 1409, 1900; LXV, 1915, pp. 1037, 1469; LXVI, 1916, pp. 434, 1033, 1708, 1785; LXVII, 1916, pp. 960, 1168, 1765.

NAMES OF COLORADO CONTRIBUTORS TO THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION AND THE TOTAL NUMBER OF ARTICLES CONTRIBUTED, CLASSIFIED ACCORDING TO THE YEAR IN WHICH THEIR FIRST CONTRIBUTION APPEARED.

	Number of Contributions
1885—	
Charles Denison	23
J. W. Brown.....	3
1889—	
S. Edwin Solly.....	6
1890—	
T. S. Horn.....	1
1893—	
E. C. Atkins.....	2
Andrew Steward Lobinger.....	2
T. J. Eskridge.....	7
W. C. Bane.....	3
C. K. Fleming.....	2

Robert F. Le Mond.....	2
Robert Levy	6
F. E. Waxham.....	9
1894—	
J. N. Hall.....	16
W. P. Munn.....	5
Clayton Parkhill	1
W. L. Schenck.....	3
1895—	
Edward Jackson	28
C. A. Powers.....	10
E. R. Axtell.....	2
1896—	
L. E. Lemen.....	2
S. T. McDermith.....	1
Leonard Freeman	8
H. W. McLauthlin.....	2
G. H. Stover.....	3
C. D. Nelson.....	1
J. A. Dunwoody.....	1
A. G. Place.....	1
1897—	
Norman W. Bellrose.....	1
Horace G. Wetherill.....	13
Mansfield Holmes	7
W. W. Reed.....	1
Jesse Howes	1
1898—	
Thomas H. Hawkins.....	1
W. W. Grant.....	19
C. D. Spivak.....	14
J. M. Foster.....	1
Henry Sewall	5
L. A. Robinson.....	1
G. E. Tyler.....	5
S. G. Bonney.....	9
E. T. Boyd.....	1
H. Rover	1
Willis Thompson	1
Samuel Fish	2
Duncan Bulkley	1
A. J. Horn.....	1
W. N. Beggs.....	1
George Mill	1
M. H. Sears.....	1
Melville G. Black.....	6
T. Mitchell Burns.....	2
B. Roseberry	1
H. B. Whitney.....	1
W. J. Rothwell.....	1
W. A. Kickland.....	2
1899—	
C. F. Gardiner.....	1
Thomas Gallaher	3
J. M. Blaine.....	1
Llewellyn Barbour	1
E. Stuver	5
1900—	
E. C. Hill.....	1
J. Tracy Melvin.....	2
1901—	
John S. Miller.....	1
Minnie C. T. Love.....	1
J. E. Kinney.....	1
John Sheldon	2
W. F. Martin.....	1
1902—	
Arthur McGugan	1
Clarence Wheaton	3
T. M. Hopkins.....	1
S. D. Van Meter.....	6
H. T. Pershing.....	7
John Inglis	5
1903—	
F. Gregory Connell.....	5
A. R. Solenberger.....	1
N. W. Judd.....	1

C. E. Cooper.....	1	Oliver Lyons	1
S. D. Hopkins.....	1	O. S. Fowler.....	1
H. M. Cohen.....	1	J. J. Mahoney.....	1
G. A. Moleen.....	4	1915—	
1904—		Cuthbert Powell	2
M. E. Preston.....	2	A. W. Stahl.....	1
L. M. Giffin.....	1	George H. Cattermole.....	1
1905—		A. J. Markley.....	1
A. E. Engzelins.....	1	O. M. Shere.....	1
Bernard Oettinger	1	Philip Work	1
W. A. Jolley.....	2	1916—	
Maurice Kahn	5	F. M. Houch.....	1
J. F. McConnell.....	1		
1906—			
L. D. Peebles.....	1	NUMBER OF ARTICLES BY COLORADO	
G. R. Payne.....	1	PHYSICIANS IN THE JOURNAL OF THE	
G. F. Roosevelt.....	1	AMERICAN MEDICAL ASSOCIATION, BY	
E. G. Edwards.....	7	YEARS.	
T. B. Moore.....	2	1885	2
O. M. Gilbert.....	2	1886	1
Ottis Orendorf	4	1887	2
C. B. Dyde.....	1	1889	1
W. F. Church.....	1	1890	2
1907—		1891	2
Walter G. Holden.....	1	1892	1
Gerald B. Webb.....	1	1893	10
H. E. Hutchinson.....	1	1894	8
James R. Arneill.....	1	1895	9
Henry Benjamin Oertel.....	1	1896	17
Maynard Harding	1	1897	10
C. E. Ruth.....	1	1898	53
Paul R. Sibert.....	1	1899	26
T. E. Neres.....	2	1900	19
B. H. Ellis.....	1	1901	21
C. E. Tennant.....	7	1902	29
1908—		1903	20
A. McClanahan	1	1904	24
Borta Lisle Wright.....	3	1905	12
J. D. Gibson.....	1	1906	23
1909—		1907	25
William Harlow	1	1908	13
J. B. Fish.....	1	1909	19
H. Freudenberg	1	1910	20
E. J. A. Rogers.....	1	1911	17
James Allen Patterson.....	1	1912	16
Frank R. Spencer.....	1	1913	23
Rose W. King.....	1	1914	9
1910—		1915	12
J. E. Dale.....	1	1916	13
James C. Todd.....	1		
Elizabeth MacVeen Collier.....	1		
F. W. Bancroft.....	1		
David H. Coover.....	1		
H. Trossbach	1		
Leonard W. Ely.....	6		
1911—			
Clough Turrill Burnett.....	1		
F. E. Wallace.....	1		
G. Burton Gilbert	3		
F. W. Acker.....	1		
James C. Pattee.....	1		
R. W. Corwin.....	1		
William W. Whitridge.....	1		
1912—			
C. B. Ingraham.....	1		
F. Shoemaker	1		
M. R. Bren.....	1		
W. H. Crisp.....	1		
W. A. Jayne.....	1		
1913—			
Arthur Friedmann	1		
Agnes Ditson	1		
J. P. Gengenbach.....	1		
W. V. Gage.....	1		
S. B. Childs.....	1		
Frank L. Dennis.....	1		
W. M. Spitzer.....	1		

IF YOU EXPECT TO ATTEND THE OCTOBER MEETING IT MIGHT BE WELL TO MAKE HOTEL RESERVATIONS IN ADVANCE.

NEW AND NONOFFICIAL REMEDIES.

During June the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with new and nonofficial remedies:

Robert McNeil: Chlorcosane (McNeil); Dichloramine-T. (McNeil).

Lederle Antitoxin Laboratories: Pituitary Extract, Lederle; Ampules Pituitary Extract, Lederle, 0.5 cc., 1 cc.; Tuberculin "O. T." (Old Tuberculin); Tuberculin "B. E." (Bacillary Emulsion); Tuberculin "B. F." (Bouillon Filtrate); Antidysenteric Serum (Polyvalent); Streptococcus Vaccine (Polyvalent).

REMEMBER THE TIME OF THE STATE SOCIETY MEETING—OCTOBER 7, 8, 9, DENVER.

News Notes

EVERY EFFORT IS BEING MADE BY THE ENTERTAINMENT COMMITTEE TO TAKE CARE OF THOSE WHO ATTEND THE STATE SOCIETY MEETING OCTOBER 7, 8, 9, AT DENVER. WILL YOU BE THERE?

Dr. J. M. Shields, formerly of Grand Junction, who was discharged from the service in April, has located in Denver and will limit his practice to ophthalmology, with office at 764 Metropolitan building.

Dr. J. H. Woodbridge of Pueblo has been honorably discharged from army service and has resumed his practice with offices in the Thatcher building.

Dr. L. H. Wade received his discharge from the army July 21 and has returned to Denver, where he has resumed the practice of roentgenology in association with Dr. F. B. Stephenson, 436 Metropolitan building.

Drs. Harold G. Macomber, Amos Beaghtler and A. S. Cecchini, who served together in base hospital twenty-nine and later in France, have returned to Denver and resumed their respective practices.

The death at Pueblo of Dr. G. R. Pogue of Greeley occurred in the early part of July.

Dr. E. H. Brown of Pueblo has received an honorable discharge from the army and has resumed practice at his former office.

Dr. F. E. Wallace of Pueblo left July 25th for Chicago to do postgraduate work. He will return to Pueblo about September 1st.

Dr. S. B. McFarland of Longmont, after an extended service in France, received his discharge from the army at Camp Dix on July 9th and immediately returned to Longmont to resume practice.

Dr. O. M. Gilbert was expected to return from Saranac Lake to Boulder in the first week of August.

Dr. C. E. Copeland of Hotchkiss has received his discharge from the service and is again in practice in his home town.

Dr. F. H. Carpenter of Denver, who entered the army medical corps soon after the beginning of the war, was one of the last of the Denver doctors to receive his discharge. He returned home in the latter part of July and has resumed practice at his former office in the Empire building.

Dr. N. G. Burnham, a ninety year old pioneer of Denver, died at his home July 1st, following a brief illness.

Lieut.-Col. Alexis M. Forster of Colorado Springs, superintendent of Cragmoor Sanatorium, who was in charge of an evacuation hospital in France during the past year, has returned to his home town and again taken up his work in civil life. Colonel Forster was married on May 1st, at Nantes, France, to Mlle. Liane Raymonde Queffelec, a native of that city, who accompanied him to this country.

Dr. Earl Shaffer of Delta has been honorably discharged from service overseas, has returned home and resumed his civil practice.

Dr. W. Scott Cleland of Delta, who saw service in the thick of the front in France, has been honorably discharged from the army.

Dr. R. L. Charles of Denver has received his honorable discharge from the medical corps and has resumed practice with offices in the Metropolitan building.

Dr. Edward Lazelle, who is chief resident neurologist at St. Elizabeth, the government hospital for the insane, Washington, D. C., returned to his home city of Denver July 15th to spend a month's vacation, after which he expected to return to duty.

Dr. Charles F. Stough of Colorado Springs, who was one of the organizers of base hospital twenty-nine and who was honorably discharged from the service last January, has received notice of his promotion to the rank of lieutenant-colonel.

Dr. E. G. Condit of Silverton has been honorably discharged from the service and has returned to his home town to resume his practice.

Dr. James R. Hurley, formerly house physician in the city and county hospital of Denver, has located at Antonito, where he will engage in general practice.

Dr. C. E. Condon of Breckenridge has returned home and resumed his practice after having been honorably discharged from the service.

Dr. George W. Bancroft of Colorado Springs stopped over in that city in the early part of August, on his way to Fort D. A. Russell, where he expected to receive his discharge from army service.

Lieutenant-Colonel J. Crum Epler of Pueblo, who was commanding officer and organizer of evacuation hospital number twenty-eight, which was established at Camp Sherman and moved to France, has returned to Pueblo, having arrived in this country July 16th. It was expected that Dr. Epler would have received his honorable discharge by the time this issue went to press.

Dr. R. L. Drinkwater of Denver has been elected secretary of the state board of health, to assume his duties August 15th.

The Colorado Ophthalmological and Oto-Laryngological Congress met in Denver August 4 and 5, with a registered attendance of sixty-three, eighteen of whom were from outside of the state. Dr. Arnold Knapp of New York City addressed the congress by invitation. At the close of the congress the guests were dined at the Motor Club in Bear Creek cañon.

Dr. Harold Lowry Hickey, son of Dr. C. G. Hickey of Denver, who for two years has been in the naval reserve service, has been released from the navy and is now located in the Mercantile building in the office of Dr. Frederick R. Pierce, supervisor of the War Risk Insurance Bureau. Doctor Hickey's last service was on the troop transport, Finland.

Dr. Emanuel Friedman of Denver has announced the limiting of his practice to diseases of children, with office at 554 Metropolitan building, as formerly.

Dr. Cuthbert Powell of Denver has returned from military service and has resumed the practice of surgery at 936 Metropolitan building.

Dr. W. V. Watson, formerly of Plateau City, announces his return from military service and change of location to Niwot, where he has resumed civil practice.

The entertainment committee has plans brewing for the October meeting at Denver, which will be announced in the September issue. In the meantime, bear in mind that the ladies are not being overlooked and that certain social features will be provided for them in the "nonofficial" program.

Col. W. A. Jolley Returns.

Lieut. Col. W. A. Jolley, who served two years in France with the Fortieth Division, first as assistant division surgeon and later as sanitary

inspector, and then as commanding officer of the One Hundred and Fifteenth Sanitary Train, and who finally was placed in command of Base Hospital No. 108, has returned to this country, having landed in New York July 6th. He is now preparing to resume practice at Boulder.

Colonel Jolley was identified with the National Guard of Colorado from 1909 until 1915, when he was sent by the American Red Cross to Serbia to supervise the work there during the typhus epidemic. He was captured at Belgrade by the Germans, but was soon released. In May, 1917, he was given the duty of preparing for mobilization the Colorado National Guard, one medical unit of which was selected for the famous Rainbow Division.

Colonel Jolley expected his formal discharge about August 1st.

IF YOU EXPECT TO ATTEND THE OCTOBER MEETING IT MIGHT BE WELL TO MAKE HOTEL RESERVATIONS IN ADVANCE.

Book Reviews

The Medical Clinics of North America. Volume 2. No. 4. (The New York Number, January, 1919). Philadelphia and London: W. B. Saunders Company. 1919. Published Bi-Monthly. Price per year: Paper, \$10; cloth, \$14.

The present volume takes us to the clinics of New York. Dr. S. W. Bandler discusses in an exhaustive manner sterility of women with especial reference to endocrine treatment of the same. Dr. Walter Timme analyzes a new pluriglandular syndrome. Dr. Walter W. Palmer presents a brief clinic on pneumococcus endocarditis treated with antipneumococcus serum. Dr. T. Stuart Hart's contribution deals with mitral stenosis and auricular fibrillation, also the uses and dangers of digitalis. The clinic of Dr. Albert R. Lamb on non-hemolytic streptococcus endocarditis is most enlightening. A clinical talk by Dr. Leo Buerger on cystitis follows, in which he states that with the proper agnostic attitude toward the nature of cystitis and a more intense desire to attain an exact anatomic diagnosis, much suffering will be prevented and the lives of some patients may be saved. Dr. Henry R. Geyelin considers certain aspects of the modern treatment of diabetes. A topic of interest is discussed by Dr. Jesse G. M. Bullowa in the consideration of local evidence of tonsil involvement in the causation of distant or systemic disease, also the advantages of local anesthesia in tonsil operations. In addition he describes influenza of the head and chest. The contribution by Dr. William H. Sheldon dwells on the hospital as a health unit. The clinic of Dr. A. S. Blungarten on cases illustrating diagnostic problems is instructive. Dr. A. McL. Strong analyzes auricular tachycardia in children. Dr. Dana Atchley considers renal disease and Dr. Eugene DuBois the basal metabolism as a guide in the diagnosis and treatment of thyroid disease. The concluding clinic is presented by Dr. Willy Meyer on a case of advanced pulmonary tuberculosis, operated upon.

This number is generously illustrated and maintains the excellent standard of this publication.

J. L. M.

The Medical Clinics of North America. (Boston Number), March, 1919. W. B. Saunders Company, Philadelphia and London. Published Bi-Monthly. Price per year: paper, \$10.00; cloth, \$14.00.

Dr. Henry A. Christian opens the Boston number with a presentation of a case of cutaneous pigmentation, palpable liver and spleen and ascites of unknown cause, simulating hemochromatosis. The manner in which the case is unfolded reveals a keen insight into clinical medicine. This is followed by a clinic on infantile scurvy, by Dr. John Lovett Morse, that contains some practical information as to treatment.

Dr. William P. Graves in his clinic on cancer of the uterine body states that from the standpoint of surgery it is a favorable disease if detected early and not allowed to drift into a stage of inoperability.

A comprehensive clinic on dermatologic diagnosis and treatment, by Dr. Charles J. White, deserves special commendation. The contribution by Dr. Fritz B. Talbot on the relation of diet to the development of children is interesting, though brief. The four cases of enlarged spleen presented by Dr. George R. Minot are most instructive, demonstrating some significant facts about the differential diagnosis and treatment of enlarged spleens. "Nephritis in Children" is handled in praiseworthy manner by Dr. Lewis Webb Hill. The clinic by Dr. Franklin W. White on the medical treatment of chronic ulcer of the stomach and duodenum is presented in a convincing and instructive manner. Dr. James P. O'Hare describes an interesting case of chronic nephritis with edema. The only periods during which the patient handled water and chloride well were coincident with the feeding of a diet high in protein.

Another contribution of value is the one by Drs. George and Leonard in the use of the x-ray in the "Study of Multiple Diverticulitis" of the colon. The closing contribution on "Some Fallacies in the Diagnosis of Ptomaine Poisoning" is most enlightening.

J. L. M.

United States Naval Medical Bulletin. Report on Medical and Surgical Developments of the War. By William Seaman Bainbridge, Lieutenant Commander, Medical Corps, United States Naval Reserve Force. Issued by the Bureau of Medicine and Surgery, Navy Department, Division of Publication, Washington, D. C., January, 1919.

This valuable bulletin of two hundred and fifty pages covers all branches of war medicine and surgery very completely. The accompanying illustrations, which vividly portray the text, add interest to the volume and are helpful to the student.

The advanced methods of treating wounds and fractures, and the new developments in plastic surgery, as well as methods of reeducation, are worthy of perusal by medical men both in civil and military practice.

H. C. F.

NEW AND NONOFFICIAL REMEDIES.

During July the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies:

Abbott Laboratories: Barbitol Sodium—Abbott.

Hollister-Wilson Laboratories: Ovarian Substance—Hollister-Wilson. Desiccated Corpus Luteum—Hollister-Wilson.

Roessler and Hasslacher Chemical Co.: Sodium Dioxide, Dental-R. and H.

REMEMBER THE TIME OF THE STATE SOCIETY MEETING—OCTOBER 7, 8, 9, DENVER.

Training for the Disabled Soldier and Sailor.

Since physicians are frequently asked for information such as is furnished below, we are especially glad to print it at the request of the Federal Board for Vocational Education. It should be generally known with respect to the disabled soldier or sailor:

That the Government is resolved to do its best to restore him to health, strength, and self-supporting activity.

That until the time of his discharge from hospital care the medical and surgical treatment necessary to restore him to health and strength is under the jurisdiction of the Military or Naval authorities.

That the vocational training which may be afterwards necessary to restore his self-supporting activity is under the jurisdiction of the Federal Board for Vocational Education.

That if he needs an artificial limb or other orthopedic or mechanical appliance the Bureau of War-Risk Insurance supplies it free upon his discharge and renews it when considered necessary.

That if, after his discharge, he again needs medical treatment on account of his disability the Bureau of War-Risk Insurance supplies it free.

That any man whose disability entitles him to compensation under the War-Risk Insurance Act may be provided by the Federal Board with a course of vocational training for a new occupation.

That the Government strongly recommends each man who needs it to undertake vocational training and put himself under the care of the Federal Board, but the decision to do so is optional with each man.

That if his disability does prevent from returning to employment without training and he elects to follow a course of vocational training provided by the Federal Board, the course will be furnished free of cost, and he will also be paid as long as the training lasts a monthly compensation equal to the sum to which he is entitled under the War-Risk Insurance Act or a sum equal to the pay of his last month of active service, whichever is the greater, but in no case will a single man or a man required by his course of instruction to live apart from his dependents receive less than \$65 per month, exclusive of the sum paid dependents; nor will a man living with his dependents receive less than \$75 per month, inclusive of sum paid to dependents.

That if his disability does not prevent him from returning to employment without training and he elects to follow a course of vocational training provided by the Federal Board, the course will be furnished free of cost to him, and the compensation provided by the War-Risk Insurance Act will be paid to him, but no allowance will be paid to his family.

That in addition to the above the family or dependents of each disabled man will receive from the Government during his period of training the same monthly allotment and allowance as that paid prior to his discharge from the Army or the Navy.

That upon completion of his course of training he will continue to receive the compensation prescribed by the War-Risk Insurance Act so long as his disability continues.

That in nearly every case, by following the advice and suggestions of the Federal Board, he can either get rid of the handicap caused by his disability or acquire new powers to replace any that may have been lost.

That if he is willing to learn and to take advantage of the opportunities to increase his skill

offered him by the Federal Board he can usually get a better position than he had before entering the service.

That if he fails to take advantage of these opportunities he will find himself badly handicapped when he is obliged to compete with the able-bodied men who come back to work after the war.

That the Federal Board, through its vocational experts, will study his particular disability and advise him as to the proper course to pursue and give him free training for the occupation best suited to him.

That on the satisfactory completion of his training the Federal Board, through its employment service, will assist him to secure a position.

That public authorities and other large employers will in many cases, at least, give the disabled soldiers and sailors preference when filling vacant positions, provided they possess the training necessary to fill them.

All disabled soldiers, whether in or out of the hospital, should address their communications either to the Federal Board for Vocational Education, Washington, D. C., or to the district office of the Federal Board of the district in which he is located. Colorado, Wyoming, New Mexico and Utah are in District No. 11. Office: 909 Seventeenth street, Denver, Colo.

A Study of Some Factors of Complement Fixation.

From the Henry Phipps Institute, Lewis reports the results of studies that aimed primarily to determine, if possible, the lack of harmony that characterized the experience of different workers in the application of the complement fixation tests to tuberculous. His investigations dealt mainly with such matters as the reaction time, the measure of completely bound complement, and titration against the antigen. Wherever possible, he has tried to apply quantitative methods to the study of the reaction. He confirms the observations of others that certain tuberculous individuals give strong deviation reaction, while others entirely fail to react and certain apparently wholly normal persons also give strong reactions. Perhaps his most important practical conclusion is that the numerical relations are such as to make it unsafe to apply the reaction to the diagnosis of tuberculosis except as a matter of the most limited confirmatory interest. Continuous application of the test throughout the course of the disease may in the future develop importance. Methods hitherto applied in making the test have inherent defects that seriously impair its significance; but these have been remedied to a considerable extent by increasing the time of primary incubation or "period of fixation" to four hours and by employing several quantities of either complement or antigen simultaneously. The common feature of all of the "extractive" antigens of the tubercle bacillus is a thermostable, alcohol soluble constituent. The antigenic activities of a suspension of tubercle bacilli are impaired but not destroyed by five minutes exposure to 100 degree c. By adding an equal quantity of glycerin the deviating qualities of tuberculous serums are reasonably well preserved, so that a temporary standard for the determination of the qualities of antigen may be established.

Lewis, Paul A. The Complement Fixation Reaction as Applied to Tuberculosis. American Review of Tuberculosis, May, 1919. Vol., III., No. 3.

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PUBLICATION COMMITTEE.

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Editorial Comment

STATE MEETING PLANS.

Arrangements have been made to make the Brown Palace Hotel headquarters during the coming meeting of the Colorado State Medical Society on October 7th, 8th, and 9th. The city has been unusually full of visitors all summer, and the prospects are that there will be a great many people here during the fall. It is therefore necessary for out of town members who expect to attend this meeting to **make reservations early**. This applies to all hotels.

The assembly room of the Medical Society of the City and County of Denver in the Metropolitan Building will be used for the scientific sessions. Here we shall have a lantern and screen, blackboard, and other facilities for graphic demonstrations.

The President's reception with dancing will be held in the ballroom of the Brown Palace Hotel on Tuesday evening, October 7th, at eight o'clock. The banquet, to which the wives of members will be invited, will be held at the Brown on Wednesday evening, October 8th, at seven o'clock.

Arrangements will be made for an automobile trip over the Lookout Mountain-Bear Creek drive on Thursday afternoon, October 9th. Out of town members and their families will be invited.

The Ladies' Entertainment Committee extends a welcome to all visiting ladies and hopes that there will be a large attendance. On Tuesday afternoon, October the seventh, the Committee will entertain the visitors at a matinee and on Wednesday there will be a drive followed by a tea at the residence of Mrs. McNaught, 745 Fillmore street.

The ladies will confer a favor upon the Registration and Information Committee if, immediately upon arrival, they register at Ladies' Headquarters in the Brown Palace Hotel.

S. B. CHILDS,
Chairman, Committee on Entertainment.

WAR LESSONS IN TUBERCULOSIS.

Even more important than the work of reconstructing those human and material fabrics which were damaged or destroyed by the European war will be the endeavor to gather from the circumstances of the war lessons for the betterment of method in departments of human activity not directly connected with military enterprise.

Many truths have been learned concerning epidemic diseases whose frequency and violence is apt to be increased among armies. France especially, somewhat surprisingly backward in hygiene and sanitation, has received a great impetus toward reform in these matters. The remarkable work, initiated largely through the efforts of the American Red Cross, in attacking the tuberculosis problem in France was a rather indirect consequence of the state of war, since it originated in disclosures concerning the incidence of tuberculosis in the French army.

On this ground, there is perhaps cause rather for congratulation than regret in the fact that Professor Landouzy's first estimate of 150,000 cases of tuberculosis in the French army was greatly exaggerated. Of the total number of 89,430 soldiers discharged from the French army between August 2, 1914, and October 31, 1917, 70,196 were discharged before March 1, 1916, and for the most part represented preexisting cases of tuberculosis which had been drawn

into the army in the emergency without adequate medical examination, and had not therefore been produced by the influences of army life. The 19,134 cases discharged from March 1, 1916, to October 31, 1917, may probably be taken as a truer indication of the amount of tuberculosis developed in the army during active service.

In spite of many years of investigation, treatment, and discussion, some of our ideas concerning tuberculosis are still hazy and debatable. This is especially true as regards the value and danger of exercise in the open air in active cases of the disease; and Miller (American Review of Tuberculosis, Vol. 3, No. 6) believes that the relative occurrence of tuberculosis in the various armies and civil populations during the war may furnish important evidence. As to the armies of France, Great Britain, Belgium and the United States, he feels justified in concluding that tuberculosis was not increased by the influence of the war upon the armies in the field, but that the effect of army life was rather to diminish the hazard from pulmonary tuberculosis.

Coming to the civil population of France, the overcrowding in the larger cities and excessive industrial pressure apparently produced a relative increase in tuberculosis, especially among the younger women who were most affected by the housing and industrial conditions. In England also a progressive increase in the death rate from pulmonary tuberculosis was more marked among women, and was attributed to their extensive employment in munition and other industrial occupations under exceptional stress, often associated with crowding in the home.

As to the occupied parts of Belgium, in Germany and Austria-Hungary, and in Serbia there is evidence that insufficiency of food was responsible for a very great increase in the percentage of deaths from tuberculosis, as well as from other diseases.

From the experience of the armies, Miller argues that we may need to readjust our ideas concerning the hazards of hard physical exertion and exposure as regards the breakdown of resistance to tuberculosis, provided that these conditions are combined

with open air life. In latent or arrested cases the contrast between the effect of army life and that of city industrial life seems to have been thoroughly substantiated; so that the risk of overwork in such cases may be less than we have become accustomed to believe. In view of the infrequent development of pulmonary tuberculosis as the result of exposure to poisonous and irritating gases or chest wounds, the question is raised whether we have not in the past overemphasized the dangers of mechanical irritation and trauma as exciting causes of active tuberculosis.

Since there is good ground for believing that overcrowding in the factory plays a larger part in the development of tuberculosis than overcrowding in the home, it will be particularly desirable to pay increasing attention to systematic supervision of working conditions. Furthermore it is likely that the problem of the after-care of the discharged sanitarium patient will be most satisfactorily dealt with by the development of industrial colonies, with reeducation and vocational training for the tuberculous. If facilities of this kind are desirable and profitable in the case of the tuberculous soldier, it is obvious that they should also be resorted to as far as possible for tuberculous civilians.

W. H. C.

ANNUAL REGISTRATION OF PHYSICIANS.

The Medical Practice Acts of most of the states provide that the prosecution of offenders shall take place in the district in which the offense is committed, and there must be a complaint lodged by some one before any infraction is recognized.

The way these acts work out is this: A person is practicing medicine in a certain county. Whether he is duly licensed by the state and registered in his county, is unknown. Nobody especially cares, the average layman or patient taking it for granted that the assumption of the title, Dr., is sufficient guarantee of qualification on the practitioner's part. The only ones to whom it may occur to question the matter of license are the fellow practitioners in the dis-

trict (if there be any). If by chance one of these investigates and finds the suspected man to be unlicensed, it devolves upon him to either ignore such fact or to report it to his district attorney or to the State Board of Medical Examiners, in either of which latter cases, when prosecution is undertaken, he is called as a witness, which entails publicity and marks him as the complainant in the case. Many shrink from this publicity and follow the course of ignoring the matter—call it moral cowardice, if you will—knowing that the public at large takes a sarcastic attitude toward any controversy in the ranks of the doctors, and that such controversies therefore result in detriment to the medical profession in general and to the practice of the complaining individual in particular. If we correctly understand the psychology of the average (not the most enlightened) layman, he sneeringly credits the accuser with wanting to ride his “competitor” out of “business” on a technicality of law, and even district officers often have the same prejudicing belief.

While the State Board of Medical Examiners has no authority to prosecute, its powers being limited to furnishing evidence as to licensure in our state, it voluntarily has gone as far as to send a man into the field and work up evidence in known cases of violation of the Medical Practice Act.

If it is asked, why does the board not accomplish more prosecutions, the answer is partly in the above given statement—local physicians will not take the initiative and hence the State Board does not know of the offense; the rest of the answer is, limited funds prevent.

It must, then, be clear that the present provision for protecting the public from the fraudulent and ignorant practitioner is inadequate. The public feels no concern in the matter and it rests with the better men of our profession to produce the remedy, in the spirit of altruism which underlies public health work, and in the more selfish but laudable spirit of jealousy of our ideals and ethics.

One proposal which should partly overcome the present defects of our law is to require the annual registration of all li-

cenciates. Such a proposed bill for Colorado includes in its provisions that from the records of registration a list of licenciates in each county be sent to each licensed man in that county, so that he would know by a glance at this list whether anyone in his locality was not duly licensed. By reporting any unlicensed man to the State Board, the case could then be worked up with the aid of additional funds provided by the registration fees and the reporting doctor need not be connected further with the case, nor his name be known in connection with it; and perhaps an even more effective outcome of the measure would be that the unlicensed seamp, upon finding his name conspicuously absent from a published list of licensed practitioners, would fold his ten and quietly betake himself to other states where the light of publicity is not yet being shed upon endeavors of his sort.

Other states have taken this initiative in the enactment of registration laws, notably Illinois and California, and report considerably improved conditions. A registration bill was, in fact, introduced at the last meeting of our own legislature, but was defeated. One of the papers at the coming state meeting will deal with the subject and very probably the matter of endorsing the reintroduction of such a bill will be brought before the society, therefore something of its character should be known in advance.

The object cited is only one. Briefly summed up, the advantages are: That the State Board of Medical Examiners will have a record showing who are practicing and where they are registered in a given year, whereas it now can know only who have been licensed in the past years of the board's existence; that evasion of the Medical Practice Act will be discouraged through publicity; that men who have practiced here in early days and have since engaged in nefarious work in other states and perhaps have been run out may not return here and practice under their old licensure; that licenses may not be sold and fraudulently used by the purchaser; that the exact privileges and limitations of the various licensed cults will be stated in the lists of registrants, so that they will hesitate to exceed their

legal rights in practice. The objections which may occur to one are the \$2.00 annual tax, the trouble of registration and, perhaps, a feeling that a loss of dignity would attend the act of registering.

These objections are met by the advocates of the plan with the thought, in the first instance, that the protection of citizenship is met by taxation and that the good citizen always pays the bill for prosecution of the criminal; and that a \$2.00 tax is a small amount to pay considering the advantages to the public and the profession which should ensue; and in the other instances, that the inconvenience of registering is no greater than is experienced in registering for the exercise of that other privilege of citizenship, the right to vote, and surely no citizen feels that he stoops below the plane of his dignity in doing that.

ABSTRACTS OF PAPERS.

To be read at the Forty-Ninth Annual Meeting of the Colorado State Medical Society, in Denver, Colorado, October 7th, 8th, and 9th, 1919.

Note.—The abstracts given below are those which are available at the time of going to press with the September number of Colorado Medicine.

The titles and abstracts here given are arranged in alphabetical order of the authors' names, and not as they will appear on the final program.

SPLENIC ANEMIA IN CHILDHOOD.

J. W. Ames, M. D., Denver.

Comparative rarity of splenic diseases in childhood; uncertain etiology; influence of malaria and syphilis; infantile splenic anemia of von Jaksch; differential diagnosis; limitations of treatment; necessity for operation.

VACCINE THERAPY IN PERTUSSIS.

G. M. Blickensderfer, M. D., Denver.

Its value as an immunizing agent; as a curative measure. Types of vaccines used. Autogenous vaccine. Pertussis stock vaccine. Pertussis mixed stock vaccine. Doses and frequency of administration. Reactions. Duration of paroxysms. Duration of cough. Duration of vomiting. Supplementary treatment; hygiene, diet. Results. Conclusions.

ANTITUBERCULOSIS ACTIVITIES IN FRANCE.

C. T. Burnett, M. D., Denver.

Before the war there were practically no efforts being made leading toward the pre-

vention of tuberculosis. The Service de Santé was very poorly organized and limited its activities to the army and a few of the more important centers. The Biggs Report, while received with some displeasure by the French, was found to underestimate the total number of cases. The work of the Rockefeller Commission and of the Bureau of Tuberculosis of the American Red Cross is described. Results in France.

TUBERCULOSIS IN THE ARMY.

George H. Cattermole, M. D., Boulder.

Appointment of boards of examiners to detect and exclude all cases of tuberculosis in the army. Small number of active cases found.

Influence of influenza epidemic in activating tuberculosis. Many cases of unresolved pneumonia and bronchitis were sent to hospitals as cases of tuberculosis.

Negro recruits from the North showed a large percentage, with fibrosis or healed tuberculosis in the lungs. Many negroes from the South showed extensive tuberculosis after having been in the service for some months. These southern negroes may not have been so carefully selected as those from the North. Negroes present a type of tuberculosis similar to that seen in children.

There is a great tendency toward arrest of the disease in those with small and circumscribed lesions, while in fatal cases the extent of the involvement is usually very great. Best care is given in the army to tuberculous soldiers.

THE TREATMENT OF CORNEAL CONDITIONS BY THE GENERAL PRACTITIONER.

William H. Crisp, M. D., Denver.

Frequency of some corneal inflammations and injuries which are likely to be treated by the general practitioner, especially during their earlier and more critical stages. Foreign bodies and the risk that their lodgment on the cornea may be followed by ulceration and partial or complete loss of vision. As regards foreign bodies, importance of correct use of oblique illumination, and thorough sterilization of spud or other instruments, and occasional necessity for use of atropin and cauterization; industrial consequences of negligence. As regards cor-

neal ulcer, necessity for use of atropin in proper strength and with sufficient frequency. Consultation with an ophthalmologist should not be postponed until the case is desperate.

DIFFERENTIAL DIAGNOSIS OF URETERAL OBSTRUCTION FROM LESIONS OF OTHER ABDOMINAL ORGANS.

O. S. Fowler, M. D., Denver.

The pain of ureteral obstruction may be mistaken for that due to lesions of a number of abdominal organs. Obstruction of the ureter may be more or less complete for longer or shorter periods. The history of the patient is very important and this condition gives a certain symptom complex that is really very definite, and when once understood does not really admit of a large percentage of error. When recognized as probably of kidney or ureteral origin, these cases should be cystoscoped and x-rayed, which, if done properly, will almost positively include or exclude the kidney and ureter.

Ureteral obstruction may come from several causes, both from within and from without, more often the latter. A negative urine certainly does not exclude the kidney. Most kidney difficulties are not of kidney, but rather of ureteral origin.

Presentation of slides demonstrating these lesions in patients who have been diagnosed or operated upon for other conditions without relief. Completion to date of report of treatment of this lesion by operation which was presented to this society eleven years ago.

TEACHING SIMPLIFIED INFANT FEEDING.

F. P. Gengenbach, M.D., Denver.

Feeding will always be the problem of the individual infant. Nature's food—breast milk—the best. Mother's milk first choice, milk from wet nurse second choice, artificial feeding third choice by force of circumstances. Transition from two- to three-hour nursing interval well established; now tendency to four-hour interval with five nursings in twenty-four hours. In artificial feeding, tendency to simple mixtures. Amount of milk and other ingredients based on infant's weight as well as age. Percentages and calories used as a check.

THE RELATION OF HERNIA TO MILITARY SERVICE.

W. W. Grant, M.D., Denver.

A large percentage of rejections were due to hernia, no matter in what form. Army regulations compelled rejections, but later were modified. Though fully equipped for civic duties, those having hernia are disqualified for military duty. Reasons based upon untenable theories and unjustifiable fears. The character of service should be an influential factor.

EMPHYEMA. CLINICAL DIAGNOSIS. X-RAY DIAGNOSIS.

J. N. Hall, M.D., and S. B. Childs, M.D., Denver.

Frequency of empyema.

Unusual forms easily overlooked, or mistaken for other conditions.

Perforation of contents into lung pericardium, abdomen, through chest wall, etc.

Localization by roentgenography.

Use of needle.

Consequences of failure of diagnosis.

A REPORT OF THREE CASES PRESENTING A MASTO-UTERINE SYNDROME WHOLLY RELIEVED BY LUTEUM.

John B. Hartwell, M.D., Colorado Springs.

Reports of three cases who sought relief from constant pain in one or both breasts and whose catamenia had always been irregular and accompanied by pain and not infrequently associated with vomiting. Menstrual flow scanty. On examination, breasts negative save for asymmetry. Uterus small and anteflexed. Blood pressure in each instance lower than normal. Exhibition of corpus luteum caused complete abolition of pain in the breast and practically complete relief from dysmenorrhea with a rise of blood pressure to the normal.

THE CONTROL OF CANCER.

Philip Hillkowitz, Denver.

Sociologic and economic aspects.

Importance of early examination.

Necessity of public education and propaganda.

What is being done by the American Society for the Control of Cancer.

The duty of the physician in enlightening his own community.

FRACTURE OF THE TIBIAL SPINE.

S. Fosdick Jones, M. D., F. A. C. S., Denver.

Fracture of the spine of the tibia occurs more frequently than is generally supposed, and may or may not be accompanied by rupture of the crucial ligaments of the knee joint. The writer of this article will give a review of the literature upon the subject and report clinical and radiographic findings of five cases in which fracture of the tibial spine occurred.

The non-operative and operative methods of treating these cases and a plea for the more complete immobilization and a longer time before weight bearing is permitted, will be considered.

DOUBLE OPTIC NEURITIS ASSOCIATED WITH DENTAL AND NASAL FOCAL INFECTION.

George F. Libby, M. D., Denver.

Sudden and marked impairment of vision occurred especially in the left eye. The ophthalmoscope revealed double optic neuritis, with moderate edema. There were several devitalized teeth. Although the x-ray indicated no apical abscess, it showed a broken dental burr in one tooth. Extraction of this tooth opened up a "blind abscess" which yielded the streptococcus viridans in culture.

The next step was a submucous resection of the nasal septum by Dr. T. J. Gallaher, which relieved the pressure of the left middle turbinal, and was followed by ocular improvement. Next, all the remaining devitalized teeth were extracted. Full recovery followed. After a month the left vision suddenly dropped.

Exenteration of the left sphenoid, which had been under suspicion and close observation by Dr. Gallaher from the first, was followed by cure of the neuritis, with vision above normal in each eye. When last seen, seven months later, recovery held.

This case is reported to indicate the need of searching for more than one focus of infection, in some cases of secondary ocular involvement.

NATIONAL PROGRAM FOR THE CONTROL OF VENEREAL DISEASES.

A Representative from the National Public Health Service.

STATE PROGRAM FOR THE CONTROL OF VENEREAL DISEASE.

S. R. McKelvey, M. D., Denver.

1. Federal and state legislation a basis for program.
2. State program must be practically the same as national program to secure co-operation.
3. Interpretation and enforcement of the law.
4. Cooperation of physicians essential to success of the program and not against the interests of the medical profession.
5. Activities, present and future: (A) Medical, (B) Educational.

DISCREPANCIES BETWEEN THE CLINICAL SYMPTOMS AND LABORATORY FINDINGS IN SYPHILITIC DISEASE OF THE NERVOUS SYSTEM.

George A. Moleen, M. D., Denver.

Brief resumé of the evolution and significance of laboratory processes to date, and the values to be placed on different procedures. Clinical records of cases which were opposed to the laboratory findings, with comments. Conclusions.

ILEUS.

Julius L. Mortimer, M. D., Denver.

Various forms of ileus. Ileus is a symptom complex that gives no clue as to the causative malady. The most satisfactory classification should deal with the etiology. Paralytic and mechanical ileus. Pathogenesis. Local manifestations. Nothnagel's symptom. Accelerated progressive peristalsis. Diffuse visible intestinal contour with or without peristalsis. Retrograde incarceration. General symptoms. Vomiting, pain, cessation of various forms of ileus. Prognosis. Therapy.

SUBCUTANEOUS USE OF LOBELIA.

A. J. Nossaman, M. D., Pagosa Springs.

A plea for the more extended study and use of lobelia subcutaneously. Its action as a relaxant, alterative, heart and nerve tonic, and general eliminant. Author's experience.

IS A MEDICAL DEGREE ESSENTIAL FOR THE ACCURATE FITTING OF GLASSES?

Otis Orendorff, M. D., Canon City.

Refraction is a part of the science of physics, but is not a physic. It is based upon

rational laws of physics and mathematics.

The ordinary "eyesight specialist" is not deserving of consideration, yet it is possible for the modern refractionist to be thoroughly trained by years of intensive study relating to his profession. The medical student is required to devote thirty hours to the entire study of ophthalmoscopy, and only a small part of this time to refraction.

At present it would not be safe to permit the indiscriminate use of drops by the non-medical refractionist, as men with the most varied ability and diverse standards of morality have grouped themselves under one banner, the most recent title being that of Optometrist.

MISLEADING CONDITIONS IN ACUTE SUPPURATIVE OTITIS MEDIA.

James J. Pattee, M. D., Pueblo.

Heavy discharge from second to fourth week signifies rapid and extensive destruction of middle ear and mastoid.

Mastoiditis may be very destructive without causing tenderness.

Swelling over the mastoid commonly regarded as significant of a grave condition, while in reality such cases are comparatively safe. On the other hand, the severe cases rarely swell externally.

Early operation shortens the duration, conserves hearing and prevents complications.

THE TREATMENT OF SEPTIC JOINTS AFTER THE METHOD OF WILLEMS OF GHENT.

Charles A. Powers, M. D., Denver.

High percentage of infections in joint and all other wounds in the recent war. Importance of joint wounds. New principles of management set forth by Willems, these consisting essentially of free incisions without tube or gauze drainage, and with early and frequent active movements. Personal experience of the writer at the American Military Hospital No. 1, A. E. F., especially with knee joint cases.

INDICATIONS FOR OPERATIVE TREATMENT IN CRANIAL FRACTURES.

O. M. Shere, M. D., Denver.

Comparative results in operated and non-operated cases based upon the study of a se-

ries of cranial fractures. Indications and counter-indications for operative interference in the different types of injury. Reasons why many decompressions fail to relieve.

Possibility of better operative results by early recognition and relief of symptoms. Necessity for cooperation by the neurologist and the surgeon in these cases so that each patient may receive the benefit of special diagnostic work. Blood pressure, x-ray, lumbar puncture and examination of the fundi as guides in prognosis and treatment.

Illustrative cases and exhibition of patients.

ANNUAL REGISTRATION OF PHYSICIANS.

David A. Strickler, M. D., Denver.

By annual registration of physicians we mean that each and every licentiate under the medical practice act shall be required to register his license annually with the recorder of the county in which he practices and pay a small fee which shall be available to the State Board of Medical Examiners for administrative purposes.

The sole purpose of the measure is to aid in the successful administration of the medical practice act which is accomplished by:

(a) Establishing a reliable list of the physicians actually in practice in the state, together with their addresses, there now being more than six thousand licensed physicians of record of whom less than two thousand are in practice in the state.

(b) Rendering it possible, by virtue of added funds and diminished numbers to furnish every licensee with a full list of all physicians licensed in the state and then put each and every physician in possession of knowledge relative to physicians practicing in any community that would enable him to inform the board of unrecorded individuals practicing medicine in his or other communities.

(c) Rendering it possible for the board to collect and present evidence to the district attorneys and to assist in prosecutions, which is not now feasible because of lack of funds.

ETIOLOGICAL FACTORS AND TREATMENT OF CERTAIN TYPES OF SURGICAL INFECTIONS.

C. E. Tennant, M. D., Denver.

After establishing the association of microorganisms with all surgical infections it was quite reasonable to seek destructive agents for these bacteria. This marked the age of antiseptics. The use of antiseptics not having proved satisfactory in the control of infection, many other means have been proposed and practiced.

The presence of bacteria in these surgical infections means that they are often products of pathologic processes in the tissues, rather than the etiologic factors, as for example infections associated with poor drainage and infection occurring on traumatized and lacerated tissues. Here they are an incident and the treatment should be directed toward the host in order to eradicate the unwelcome guest. At other times it is necessary to direct the treatment toward the particular organism which has invaded the host, and it is here that a properly selected bactericide may be appropriately applied. The preparation of the host, however, and his subsequent care, is growing more popular in the control of infections than formerly.

HEREDITARY APPENDICITIS.

S. D. Van Meter, M. D., Denver.

The frequency of appendicitis in certain families, not to be accounted for by other causes, warrants the conclusion that heredity is responsible.

The most rational view is that the explanation lies in inherited anatomical peculiarities, especially those unfavorable to the emptying of the organ, rather than predisposition to infection.

Report of six cases in family of nine in a period of five years, and seven cases in family of twelve within thirteen months, five of which were within seven weeks.

HERNIAS IN CHILDREN.

L. J. Weldon, M. D.

General attitude of the medical profession relative to the management of these cases. The way the laity is affected by the divergence of opinion of medical men. Results following operations on children. Percent-

age of cases curable without operation. Conditions warranting operation. Points in technic of operation in children demanding special care. Non-operative management.

THE MANAGEMENT OF DELAYED, UNION AND UNUNITED FRACTURES.

Horace G. Wetherill, M. D., Denver, and Cuthbert Powell, M. D., Denver.

1. Delayed union distinguished from disunion.
2. Exact apposition desirable though not essential.
3. Intervening tissues between fragments.
4. Detached bone fragments and blood clots as factors.
5. Attrition.
6. The passing of the Lane plate and other buried metal holding devices.
7. The efficacy of the autogenous bone graft.
8. Intramedullary vs. the inlay graft.
9. Illustrative cases.

WORKINGS AND IMPROVEMENT OF THE HARRISON ANTI-NARCOTIC LAW.

Mark A. Skinner, Collector of Internal Revenue, Denver, and Harry B. Tedrow, U. S. District Attorney, Denver.

Original Articles

REPORT OF FOUR SURGICAL STOMACH CASES, WITH REMARKS.*

A. R. POLLOCK, M.D., MONTE VISTA.

In this paper I shall attempt, first, briefly to review the surgical procedures used in the treatment of gastric and duodenal ulcer; second, by the report of four selected cases, to suggest the adaptability of some these procedures. I shall also touch upon a few debatable points connected with the subject.

The present-day methods of treating stomach and duodenal ulcer surgically are:

First: Gastroenterostomy;

Second: Direct attack of the ulcer, with or without gastroenterostomy;

Third: Pyloric closure, with gastroenterostomy, and with or without direct attack of the ulcer;

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

Fourth: Gastroduodenostomy;

Fifth: After resection of stomach, gastrointestinal continuity is reestablished (a) by anastomosing the proximal and distal cut ends as is done in sleeve resection; (b) by the second method of Billroth as is done after pylorotomy; (c) by gastrojejunostomy, the Polya operation, following extensive resection of the stomach; or (d) by antecolic gastrojejunostomy, as described by Balfour and used in the Mayo clinic; this also follows extensive resection. I had the privilege of seeing the latter operation in the Mayo clinic last November.

Gastrojejunostomy, the posterior no-loop operation, has cured more stomach and duodenal ulcers than any other single surgical procedure. The question arises, Why? What is the *modus operandi* in the cure of these ulcers by gastroenterostomy?

Early in our experience with the surgical cure of gastric ulcer, we considered gastroenterostomy a plumbing procedure, as it were, by which the ulcer area was side-tracked, put at rest, thereby allowing the ulcer to heal. Very soon, however, by means of the fluoroscope, it was demonstrated that stomach contents continued to pass out through the pylorus in greater or less quantities after a gastroenterostomy.

Patterson of London has advanced the theory that cure is brought about by an influx of duodenal contents—bile, and pancreatic and intestinal juices—which, being alkaline, tend to neutralize the gastric contents, thereby allowing the ulcer to heal. This theory, however, has not been very generally accepted.

Recent investigations by Wilensky (1) go to show that the stomach content differs very little as to acidity after gastroenterostomy from its condition before operation, and that where the acidity is reduced, the condition is only temporary, with a later increase of acidity, responding to a physiological law that the administration of an alkali stimulates a greater production of acid by the stomach. In what way, then, does a gastroenterostomy effect a cure of stomach ulcer? Should it be placed among the empiric cures?

Direct Attack: The ulcer should always

be treated directly where practicable. That is, if of such size and so situated that the direct treatment can be applied without adding greatly to the operative risk. On the other hand, one should remember that gastroenterostomy of itself usually cures.

The different methods of direct attack are invagination of the ulcer by suture, excision, resection and cautery. These several procedures may be successfully applied in different cases and will each be followed by success when applied to suitable cases. In other words, the operation should be adapted to the case in hand after the abdomen is opened and the conditions established by sight and touch. In the Mayo clinic, the actual cautery method of Balfour has gained a prominent place in the treatment of stomach ulcer.

As to the question of adding a gastroenterostomy after treating the ulcer by excision, I should say that at the present stage of our experience it should be done. However, on a recent visit to the experimental laboratory of Dr. A. A. Straus, of Chicago, I was very much impressed with his work. He first produces the ulcer, then operates and treats by excision, using a graft of fascia from the rectus abdominus to insert into the defect at the site of the excised ulcer, and reinforces by suturing over all a tag of omentum. He claims that the insert of fascia prevents the crippling of the stomach and thus the normal peristaltic movements are retained; therefore the necessity of a gastroenterostomy is avoided.

Pyloric Closure: The question as to the advisability of pyloric closure in conjunction with gastroenterostomy is still debatable.

The following case reports will serve to explain the choice of methods of treatment:

Case I. A. S. D., male, aged forty-one, operated five years previously for appendiceal abscess, drainage only. About one year later, the appendix was removed by one of the very good surgeons of the state. Stomach trouble continued. July 12, 1917, while sixty miles up in the mountains, looking after some sheep, the patient was taken suddenly with sharp pain in the epigastrium, accompanied by vomiting. After nine days

without medical aid, he made his way by horseback, automobile and train to Del Norte. Examination showed temperature 97° F., pulse 120, and symptoms of general peritonitis. Operation, July 21, 1917, at St. Joseph's Sanitarium, Del Norte. There was much fluid, with flocculent masses and particles of food in the peritoneal cavity, and a perforated ulcer on the anterior wall of the duodenum was found; unsuccessful attempts on the part of nature to close the perforation were in evidence. The perforation was closed by three rows silk, Lembert sutures, reinforced by a tag of omentum. Drainage was established here and above the pubes by split rubber tubing. Temperature, 99½° on the day following operation, otherwise subnormal to the time of his death on the sixth day following operation. Interesting points are, first: History of stomach trouble for many years, definite appendix disease, definite duodenal disease. What, if any, relation did the appendicitis bear to the duodenal ulcer? Second: The length of time elapsing between probable date of perforation and death.

I have on record the case of a young woman who for several years complained of "stomach trouble". In 1911 I was called to her home and found her in bed, vomiting blood. About one year later I was again called to her bedside and found her suffering from pain in the abdomen, vomiting, and all the physical signs of an acute attack of appendicitis. I moved her to the hospital and removed a very acute appendix. Since that operation she has been free from her old "stomach trouble".

Case II. Mr. G., aged forty-two; had suffered for about seven years from a stomach disorder which had been diagnosed ulcer. Thanksgiving Day, 1917, on beginning dinner, he was taken with excruciating pain in the stomach and vomited. The vomitus was slightly blood-stained. When I saw him he was in profound shock, cold and clammy, with boardy rigidity of the abdominal muscles, especially over the epigastrium. He was gotten to the operating table in seven hours, and a perforation in anterior wall of stomach near the lesser curvature was found and closed by three rows of silk, reinforced

by omentum. Drainage was inserted down to the right kidney pouch and through a stab wound above the pubes. He made a good, though somewhat stormy, convalescence and has had very little trouble with his stomach since. Both these cases were placed in the Fowler position and glucose solution administered by the Murphy drip method.

I should like to emphasize the value of suprapubic drainage combined with the Fowler position in these cases. Also, that the use of a tag of omentum to reinforce or vivify the site of perforation is a wise precaution.

The question of whether to do a gastroenterostomy following the closure of a perforated gastric or duodenal ulcer is still debatable. Deaver (2) in a recent article advocates the doing of the gastroenterostomy. His cases, upon the histories of which his conclusions are based, had periods of two to eleven hours between perforation and operation. It seems to me that the decision for or against gastroenterostomy should depend mostly upon the length of time elapsing between perforation and operation; also, to some extent, on the condition of the pylorus after closure of the perforation, and, lastly, on the skill of the operator.

There seems to be no doubt but that many ulcers heal and that the patients are relieved of their symptoms following perforation.

Case III. Miss H., aged thirty-seven, school teacher, in hospital with intermittent hematemesis for two weeks preceding operation, nourished by rectal feeding only. Operation, October 10, 1917; old callous ulcer on lesser curvature near cardia. The Balfour cautery operation was performed, together with a posterior gastrojejunostomy. The patient made a satisfactory recovery, returning to her work within a month. My reasons for choosing the cautery operation in this case were that I feared a simple gastroenterostomy might not be sufficient of itself for a cure, considering the location of the ulcer, and that I considered the cautery safer and at least as efficient as excision. Resection would have been a too formidable operation in the patient's weakened condi-

tion. About three months after her operation she suffered a light attack of appendicitis. Otherwise she has been quite well and has gained weight.

Case IV. Mrs. K., aged sixty-four; suffered recurrent attacks of hematemesis for past eighteen years. December, 1917, suffered a quite severe hemorrhage. Operation, January 28, 1918, revealed an ulcer on the posterior wall of the stomach, also a gall bladder full of stones. Posterior gastrojejunostomy was performed. A cholecystostomy was done, bringing the tube out through a separate opening to the right. The patient made a perfectly smooth recovery and will not admit suffering a pain or an ache since leaving the hospital. Considering her age, the location of the ulcer and the complicating presence of gall stones, we felt justified in treating her as we did with a gastrojejunostomy and cholecystostomy without any direct attack upon the ulcer.

References

- (1) Wilensky, A. O., Surg. Gyn. & Obst. May, 1918, p. 506.
- (2) Deaver, J. B., Medical Record, June 15, 1918.

DISCUSSION

C. B. Lyman, Denver: Dr. Pollock's paper opens up the question of stomach surgery which is constantly before all of us who are doing surgical work, and my experience is that every man doing surgical work along these lines has some ideas of his own.

The doctor starts out in his paper by enumerating the various methods of operation on cases of ulcer of the stomach. There is a great difference of opinion among surgeons as to what procedure should be carried out in different cases. Gastroenterostomy is an operation that is done more than any other, and it is an operation to which there are some objections. It is not a perfect procedure by any means. Those of us who have the opportunity to follow our cases after operation and see the results are not entirely satisfied when our patients come back to us with various symptoms, and we feel that, possibly, our work was not the right kind. The right method may not have been used.

I have seen a number of cases, one of which I recall now that was operated on, where the opening between the jejunum and stomach was made so close to the pylorus that the patient had no drainage. The patient had just the same mechanical condition existing after operation as before, and it made an operation of considerable magnitude to undo the old and do the proper procedure.

Another mistake often made is that of leaving too small an opening. A longitudinal opening made in the stomach will soon become circular, and, as is well known, is the foundation of some other operations in surgery; a circular opening

with a denuded surface will contract and close; it is the basis of an operation for femoral hernia without any suturing. The femoral ring is closed and obliterates itself. A gastroenterostomy opening will do the same unless it is made sufficiently large and should be much larger at the time of operation than seems necessary in order to provide for future contraction. The greatest objection to gastroenterostomy as an operation is that many of our cases come to us afterwards with pain and discomfort. They are far from well. I have tried to analyze these cases from my own experience, and have come to this conclusion, based on the fact that no case, where a resection of the pyloric end of the stomach has been done for nonmalignant disease, has ever come back with bad symptoms afterwards: my theory is, as the doctor said in his paper, that the acidity of the stomach is not necessarily relieved by drainage. If our physiological teachings are correct that the acids in the stomach contents are manufactured largely in the pyloric end of the stomach, and we can reduce the amount of acid forming area, we will thereby diminish the amount of acid pouring into the jejunum. We will thereby relieve much of the after discomfort which these patients have. Personally, I feel that wherever it is possible resection of the ulcer area of the stomach should be made. Of course, this constitutes an operation of some magnitude, and brings up the question as to whether it should be done in one stage or not. The two procedures are resection of the stomach and direct anastomosis of the duodenum to the cut end of the stomach. These procedures have always seemed to me to be mechanically imperfect. There is more danger of leakage and more danger of infection. I have always held that the complete closure of the pyloric end of the stomach and a posterior anastomosis made between the jejunum and the stomach give us a mechanically better result. Whether that should be done in one stage or not, depends upon two things: the condition of the patient, and the technic and rapidity of operating. If one is a rapid operator, and can do this operation in a short time, the shock is no greater than it would be in resection of the stomach, with a gastroenterostomy done later.

C. D. Spivak, Denver: Dr. Pollock is to be congratulated on the successes he has achieved in three cases out of four, and his diagnosis being confirmed by the operations. But I should like to say just a word, as I have said before in regard to many other cases, and that is, the surgeon himself during the last few years is beginning to realize that operations for ulcer of the stomach, no matter what method is used, are not successful in the majority of cases. By success I mean that the patients should never come back again with the same complaint as before. We cannot tell whether the ulcer has healed or not; we simply say from the standpoint of the patient, the patient is not cured.

Many years ago some of you will recall what the great Dr. Nicholas Senn said with reference to intestinal surgery. With his great wisdom and extensive experience, he stated that ulcer of the stomach is a medical, and not a surgical, disease. It seems to me, the more we will examine our cases, the more surgeons will examine their cases and go back over their records, they will find many of the cases have not been cured by operation.

In thinking over this matter I have come to the conclusion that there is a certain reason why operations are not successful, and why cases of ulcer should not be operated on, and that is, the treat-

ment that follows is not rational, is not physiological.

We do not know the cause of ulcer. We know simply an ulcer mechanically made in the stomach will heal, but these ulcers are different. There is something the matter with these ulcers that distinguishes them from other wounds or ulcers made in the stomach itself. But there is one efficient treatment for ulcer, and that is the diet. It is the dietary that follows the operation, the dietary that preceded the operation, that had something to do with the operation itself. Operation has to do with the return of the symptoms. If men and women have ulcers of the stomach through indiscretions in diet, if they bring them about through a certain diet, then the diet must be changed, and if they continue after the operation to eat the same things they did before operation, they are sure to have this ulceration arise or the symptoms at least come back the same as before, and there is one simple thing to remember. It does not require a retentive memory to hold it, nor does it require a great deal of thinking to arrive at the conclusion, namely, people who have been eating three times a day, and some usually eat four or five times a day, should have after operation only two meals a day.

Frost C. Buchtel, Denver: In 1905 I heard Dr. Pollock read a paper on "Gastroenterostomy," and in connection therewith he showed some beautiful specimens that he had obtained postmortem from dogs. He has been doing gastroenterostomies for a number of years. He had some anterior and posterior gastroenterostomies done in different ways.

I like very much indeed the way he took up his paper. He did not say that gastroenterostomy is a cure for gastric ulcer, or that a pyloric operation is a cure for gastric ulcer, or that excision of the ulcer is a cure for the ulcer. He leads us to believe that one should exercise a certain amount of judgment in his selection of cases for operation, depending upon the type of ulcer which one has. It is true, that gastroenterostomy cures a very large percentage of cases of peptic ulcer after they have had half a dozen medical cures. Lots of the peptic ulcers are duodenal ulcers and gastroenterostomy is the best type of operation for a duodenal ulcer.

Some of our bad results from gastroenterostomy come from the fact that we expect the operation to cure gastric ulcer which it does not do. I think the consensus of opinion of surgeons is that a direct attack of the ulcer, usually with some form of drainage operation, is desirable in gastric ulcer.

So far as closure of the pylorus is concerned, I do not believe it is very necessary.

So far as diet is concerned, it is queer how we get different ideas. Some people would have us eat twice a day after operation, and some feel the patient ought to eat every three or four hours to keep the gastric juice neutralized. In one type of operation for gastric ulcer, one must use a certain amount of judgment in its selection in order to obtain a cure.

In a discussion on gastric ulcer a few years ago before the Medical Society of the City and County of Denver, medical men made such a strong plea for medical treatment that the surgeons were all afraid to get up. We are not afraid to get up and compare our results with the medical treatment because we have operated on so-called medically cured cases and our patients got well and they stayed well.

I think the one thing that has given bad surgical results more than any other has been the

type of suture material we have used. We have used clothes line non-absorbable suture material, and that has given us so-called jejunal ulcers, thick ulcers for which we have to reoperate, and has given us in many cases contractions of the new stoma which Dr. Lyman mentioned. It is possible to make the opening too large. I think too, we operate on patients because the opening was too large and the stomach drained itself too quickly. I have had to re-operate because the stoma was made too close to the pylorus. The opening in a gastroenterostomy should be made at the bottom of the stomach, and it should be made large enough and not too large, and the type of suture material should be catgut, something that will be absorbed, and approximation of the mucous membrane to the stomach should be just as perfect as it is to the skin, and so on.

Dr. Pollock (closing): My idea in writing this paper was to bring out some discussion of the subject. I am very much interested in this subject, although my experience is limited. I did some experimental work years ago of a surgical nature, although it was not extensive. Dr. Will Mayo says that almost every agent has been tried in the treatment of stomach ulcer, and it was thought possible to do away with surgery, but he finally came to the conclusion that medical treatment did not cure except temporarily, and that stomach ulcer was a surgical condition after all. Chronic ulcer of the stomach or duodenum is a surgical condition and must be cured in that way.

There are different things that come up, and patients do come back after gastroenterostomy who are not relieved. Gastroenterostomy in itself is not sufficient, and something more should be done.

Dr. Buchtel covered the ground I had intended to go over.

There is something in what Dr. Spivak has said. I think surgeons are coming more and more to believe that after operation on the stomach the patient should be followed up by the medical man in a sensible way with regard to diet. In some cases the dietary of these patients should be supervised for at least a year after operation, and they should not be turned loose and allowed to eat anything they wish.

EVERSION OF TISSUE MARGINS IN WOUND APPROXIMATION.*

C. E. TENNANT, M.D., DENVER.

The subject which is so briefly presented is not a new one, for one of the first to advocate the use of this technic in wound closure was an honored member of this society and one whose name and work in this community will be revered for many years Fleming.

This same technic was once again referred to come. I refer to the late Dr. Cary K. to and endorsed by an honored ex-president of this society, Dr. H. G. Wetherill, and

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

since then, no doubt, many of the fellows have been using it. It was the suggestion found in these papers which prompted me to try the method, and the more I have used it the better pleased I am with it; and desire, therefore, once again to call attention to its efficiency and to suggest a few mechanical aids for its successful execution.

The principle underlying this technic is good, since, as we all know, the most successful repair of a wound occurs when there is an accurate approximation of the various layers of tissue, as, for example, peritoneum to peritoneum, fascia to fascia, subcutaneous connective tissue to the same structure and epithelial surface to epithelial surface. Since most of these tissues are of but knife blade thickness, it stands to reason that cell proliferation will not bridge the gap so well when these narrow margins are barely approximated with the average method of suturing, as when brought side to side by eversion. To quote from Senn, in his work on Practical Surgery, published as far back as 1901: "Ideal wound healing consists of restoration of the continuity of all the anatomic structures severed. This is accomplished by the interposition of the minimum amount of new tissue." As a rule it can be stated that the result of wound healing will be satisfactory in a reverse ratio to the amount of granulation tissue produced or required in the process of repair.

As we know, the new cells which fill the gap and go to form this new tissue are derived from previously existing cells of like kind, located in the margins of the severed tissues, and are formed by the process of indirect cell division known as karyokinesis. Soon after the cell division commences new collateral blood vessels are quickly extruded and, provided infection does not occur, firm tissues of like kind are formed to bridge the gap.

It is generally conceded that there is no wound made in the operating room, or elsewhere, which is entirely devoid of suppurative microorganisms. When there is a large amount of tissue required to fill the gap, however, the slow repair or reproduction will encourage development of the few bacteria in the wound, and this bacterial

growth may be sufficient to prevent quick and thorough restoration of the parts. In other words, the less tissue necessary to repair or bridge over the space between the margins of the wound, the less is infection likely to occur and the more rapidly will the wound heal. Conversely, it is reasonable to presume that repair or tissue reproduction should be hastened by good marginal approximation in order that the bacterial development will not have time to devitalize or destroy the new tissue. This last may in part account for the experience which we have at times, when the peritoneum and skin may be united, yet the intervening structures remain apart and tolerate pockets of pus underneath the skin, causing so-called "stitch abscesses", to which I shall again refer.

In certain tissues, notably the peritoneum, the blood serum which escapes with severing of the tissues and vessels, has, to a mild degree, the property of cementing the closely approximated edges, thereby fixing them more satisfactorily than would be accomplished by simple suture alone; especially is this true when the visceral peritoneal edges are approximated by inversion in which the principle is identically the same, but reversed. When the serum is deposited in larger quantities than the tissues can utilize, it acts as an excellent culture medium for bacteria and, therefore, any method used which will go towards the control of this accumulation of blood serum in the severed tissues probably has much to do with the elimination of postoperative low grade infections. This type of infection is, for want of a better name, usually referred to as "stitch abscess". The term "faulty approximation" might be a more accurate definition for this unfortunate sequence.

As I have suggested, the poor approximation of the wound margins and the simple edge-to-edge approximation have both a tendency to permit of accumulation of serum between the various layers, and with the edge-to-edge approximation there is also a tendency to the use of a greater quantity of catgut. This catgut may not only be a menace to successful wound repair, but at times does actually act as a foreign body when ill

chosen as to size and sterility.

The method of securing this eversion, briefly described, is to place a hook tenaculum at each angle of the incision in the layer of tissue to be united, the assistant then elevating the instruments and putting the tissue on the stretch. The layers to be sutured then come well out of the wound, the margins become everted, and with a good strong thumb forceps the operator grasps the everted edge, including both margins, and the needle is engaged in what seems to be one layer of tissue.

Either a long straight needle may be used or a curved needle in a needle-holder, but the straight needle does away with the necessity of constantly engaging a needle in a holder and, therefore, saves considerable time. The ordinary over-and-over suture or lock stitch is used for a short distance, the thumb forceps moving along and engaging the tissue just behind the needle.

At various intervals along the line a continuous mattress suture is dropped in order to keep the tissues in eversion when they fall back into the wound, and then again the over-and-over suture is applied for a short distance. These two types of suture are used at various intervals until the layer of tissue is completely approximated. The next layer is then taken up in like manner by the tenacula and put on a stretch and the same technic continued.

With the eversion of all tissues while suturing, there is from one-eighth to one-fourth inch of actual contact of like tissue. With a few stitches inserted in such manner as will hold the margins in this everted position, the double purpose of eversion and approximation is better accomplished; for when these tissues drop back into the normal position the eversion remains and the tissues are absolutely approximated. This makes possible a normal repair with a minimum of new tissue and consequently makes for a shorter convalescence. It is also reasonable to assume that this repair may go on so rapidly and the new blood vessels form so quickly that actual repair is practically attained before suppuration from microorganisms has time to intervene. The convenience and rapidity with which sutur-

ing may be done with this same technic, is, no doubt, self-evident to all. With the lessening of postoperative low grade infections, or so-called stitch abscesses, and with the firmer union of the fascia, we should naturally expect less postoperative hernias. With a more perfect apposition of the skin margins it is also reasonable to assume that besides having a more comfortable and less unsightly scar, we are less likely to have the annoying keloid formation. And again, when the parietal peritoneum is everted during the process of closure, there is less probability of postoperative omental or visceral adhesions to the parietal peritoneum, since there is no raw margin exposed within the cavity. As a rule the successful closing of an incision consumes almost one-third of the entire time of the operation. If for nothing more, I can commend this method of closure for its time-saving properties.

612 Empire building.

DISCUSSION.

C. F. Hegner, Denver: The repair of tissues has engaged the attention of not only surgeons but of every man who is engaged in first aid or casualty work. The subject of the neat closure of wounds, facilitating repair, is not usually accorded the attention which it justly and rightly merits. This is emphasized and brought to the attention of any man who visits surgical clinics in any part of the country. He is struck with the indifference on the part of the witnesses to the completion of any operation after the spectacular portion has been completed. No less is he struck by the shifting of the responsibility of wound closure by the operator to one of his assistants. While the suturing of wounds, either operative or accidental, is not so spectacular as the other steps incident to the operation, it is far from being less important.

The technic described by the essayist is admittedly not new, but like every other truism it bears repetition, for repetition is the only way in which we are able to drive home and fix a very important fact. The chief advantages lie not so much in the method of approximation or eversion, as the essayist terms it, as it does in the care necessary to secure this apposition and eversion. The apposition of like structures or eversion is necessary to secure adequate and permanent fixed repair. The detail necessary for the proper suturing makes for the elimination of dead spaces or areas to be bridged by so-called granulation tissue, the prevention of which facilitates healing and eliminates so-called infection. It also adds very much to the proper selection of material for suturing and the diminution in the number of sutures required.

I would take exception, however, to the statement, if I understood the essayist correctly, about the elimination of the needle holder in holding the needle to pass it through. That is reverting back to the faulty technic where one puts his fingers

in the wound. You do not eat with your fingers, and you should not suture your wounds with your fingers whenever adequate or appropriate instruments are at hand to hold the needle. After the closure of wounds has been secured by this method, after a period of two or three days one is astounded at the disappearance of the eversion, and it goes back to approximation. We may overdo the step, and nature takes care of the rest. The attention to detail in securing apposition of tissues is the chief advantage in the method.

BREECH OR PELVIC PRESENTATIONS.*

M. R. FOX, M.D., STERLING.

Breech or pelvic presentations are so named from the part of the fetal ellipse presenting at the pelvis. They include the presentation of the nates, knee and foot. There are four of these presentations, named in their order of occurrence as follows: left sacro-anterior, right sacro-posterior, right sacro-anterior and left sacro-posterior. These positions are named from the sacrum of the fetus and the acetabulum and sacro-iliac synchondrosis of the pelvis.

The occurrence of pelvic presentations varies somewhat. It has been about one and one-half percent of the full term labors that I have attended, which is a somewhat smaller percentage than most authorities record, but that is probably due to the fact that my practice has been in a small city and rural community and among healthy women. Four of these were born of primiparae and two of multiparae, the latter the second birth of twins, and as far as I know five are living. One was born dead, being a case in which I attempted to do a version in the hope of saving both the patient and child. The former lived. The premature labors that I have attended in this series of cases were the first or second birth of twins, all about the third month of gestation. I have had very little experience with babies younger than the third month, and in cases I have attended I have neglected to determine the presentation, but Edgar claims that two out of every eight premature labors are breeches, probably due to fetal diseases or uterine disorders. Therefore, taking into consideration my full term and premature labors, the number of breech presentations

attended would figure about four per cent, which is a pretty high average, but figuring just the full term labors it would be about two percent, a smaller average than most obstetricians report.

In a large number of cases collected by eminent obstetricians like King of Columbia University, Edgar of Cornell University and Hirst of the University of Pennsylvania, statistics show that two, three and three and a half percent of our labors will be breech cases. Again, we must make due allowance for predictions of smart men that our modern style of dress and the increasing tendency toward sterility render woman more prone to pelvic and uterine disorders, and we believe that these troubles together with multiple pregnancies and monstrosities are great factors in the formation of breech presentations. If these factors enter into the formation of breech presentations we must add to our percentage of the future over that of the past.

There should be no difficulty in recognizing a breech presentation early. By palpation we find the head is in the fundus, and the buttocks at the brim of the pelvis. Even in fat or muscular subjects, unless there is a profuse amount of liquor amnii, there is little difficulty in recognizing the contour of the fetus. By auscultation we can hear the fetal heart sounds above the navel, while in head cases they are below and to one side or the other. Digital examination shows a high position of the presenting parts and an absence of a dome-like projection of the head. The bag of waters projects through the os in a pouch-like form, and by pressure on the fundus with the external hand the characteristic features of the breech may be made out, namely: the nates and the sulcus between, the tip of the sacral bone and coccyx, the thighs, the external genitalia and anus. These are early signs. If perchance we are called late, or do not arrive until labor has progressed for some hours, and get the history of a long protracted labor, we should always suspect breech presentation, as it takes a long time for the breech to mould and get ready to descend in the pelvis. Again, if the waters have broken and the meconium is flowing from the vagina, the

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

diagnosis will be easily made. The ability of the mother to deliver this baby is good unless there are complications like contracted pelvis, monstrous child, placenta previa, labor protracted beyond twenty-four hours, rise in temperature, quick, feeble pulse, with signs of exhaustion, abnormally slow fetal heart sounds, etc. If he encounters any one or more of these symptoms or conditions the obstetrician should choose some good method and hasten the delivery.

The management of the breech is no more difficult than that of the occiput until we come to the aftercoming head. Then it is imperative to deliver the head as quickly as possible, in order that the child will not suffocate. The delivery of the knee and foot or feet is the same as that of the breech. If we can replace them it will be easier. If not, we must go ahead with them down and use the same method, only we shall expect a little more difficulty in delivering the head. In the first stage of the confinement the management will be solved by giving the patient plenty of time—and ample time is imperative, providing there is no contraindication. This is just the kind of a case in which to practice the line of treatment suggested by our Sister Italian physician. Literature tells very little of her remedies, but mentions her sweet, cheerful face and even temper doing good like medicine. Here our patient needs to be in the hands of some optimistic person like the Italian physician. Then we can leave her and give instructions to the nurse, or person in charge, to call when the pains get long, hard and close together, etc. A warm sitz bath continued for twenty to thirty minutes relaxes the tissues and relieves the nervous irritation very much. The care of the bowels is important. A good enema in the early stage of labor rids the rectum of fecal matter, gives more room in the pelvis and saves soiling later. Have the nurse make a good pad. I like a good absorbent pad better than a rubber pad. It seems to be more comfortable, is very much easier to dispose of afterward, and prevents carrying germs farther. Thorough sterilization of the gloves, instruments used, gown, hands (so far as possible), cloths used about the patient, and plenty of

antiseptic solution to cleanse the genitalia are in order. In these days when gauze is scarce and expensive, it is a good plan to have the patient instructed to have an abundance of clean cloths on hand, as they serve to keep the bed clean and make it very much easier to keep down infection. The shock and exhaustion connected with long hard labors render the woman more liable to infection, and our effort must be to minimize infection.

When you examine your patient again and the breech has entered the pelvis, and is making its descent, as soon as it gets down where you can, hook your index or index and second fingers over the thigh close up to the fetus's body, and when the mother has pains pull; it will aid very much in time, and help to preserve her strength in getting the breech down on the perineum. The bitrochanteric or greatest diameter of the breech will turn and approximate itself to the antero-posterior or greatest width of the pelvic outlet. It is best to deliver the breech without disturbing the contour or bringing down the feet. When the breech is born, have an assistant make suprapubic pressure on the fundus, which will tend to help in keeping the hands from slipping up beside the head and bothering in its delivery. The widest diameter of the fetal shoulder, or bisacromial, will approximate itself to the widest plane of the pelvis, and the anterior shoulder will become fixed under the pubic arch in case of L. S. A. and the other arm and shoulder will sweep out over the perineum. It is well to preserve the perineum from being torn by the tip of this shoulder, then the other shoulder will emerge from under the pubic arch and the shoulders are born. It is well to note the position of the cord and protect it as much as possible. My method of delivering the head is to place the fingers of the left hand in the vagina, with one finger in the fetus's mouth, the others conforming to the face of the child, letting the child's anterior surface lie on the same arm, grasp the feet with the right hand, using a dry towel, so they will not slip, and by suprapubic pressure and traction with both my hands downward, backward and upward, bring the face out over the perineum in its

successive stages. The occiput emerges from under the pubic arch, and the child is born by all of the forces working together. If the position is a posterior presentation, quick measures have been the most successful in use of the forceps, together with traction and suprapubic pressure, is the safest method. It is rather difficult to give any one method that you may like to use, but these are my hands. The different methods of Plague, Deventus, Wagands, Maureceaus, and forceps methods, are all described in textbooks and it is well to know them, but when the time comes to use them, you may use a combination of these methods to suit your convenience and fit your case. Hirst in his recent work recommends bringing down the foot in cases of placenta previa to act as a wedge and stop the hemorrhage. The fillet may be used, but I have found it very hard to put on. The blunt hook should be used only on a dead child.

The care at the time of delivery is threefold: first, the cleansing of the baby's eyes and clearing its mouth of mucus. Generally by this time the child will emit a good husky cry, and you can cut the cord and turn him over to the nurse for his toilet. Second, delivering the placenta, which is generally done by massage of the uterus or Credé's method. If the placenta does not come readily, five minims of pituitrin subcutaneously will take effect immediately, and bring on enough contractions to loosen the placenta. If it is grown fast, then of course the best method is to put on a sterilized glove and curet off the fastened parts by introducing the hand in the uterus and using the index finger for a curet. Generally the parts are dilated enough and somewhat numbed by the birth so that you can do it without anesthesia. Should there be any rupture or torn perineum, it should be sewed up at this time. There is very little pain to the immediate operation and it is very much appreciated by the mother later on. Third, remove all of the soiled clothes and have clean bed-clothes, gown, binder, pads, etc., given the mother before you leave the home. I say binder, unless the mother does not care for it, because it holds the napkin in place and gives some comfort to the mother, and it has

a certain psychological effect—but do not put it on tight. The medicinal care at this time is purely symptomatic, but there are a few general rules that it will be well to observe. As a rule these patients need a uterine stimulant, especially if you have used pituitrin, and generally they have after-pains, showing that the uterus does not completely contract. Small doses of ergot every six hours will be the best drug that you can give. The diet for the period of labor shock, which lasts two or three days, must be light and nourishing. Give plenty of water, secure a quiet restful attitude, with very little company, provide a warm saline bath at least once daily, preferably at night, followed by massage of the back and abdomen, and if there are any symptoms that deserve other medication, attend to them. After the period of labor shock has passed, and the milk is beginning to be secreted, the bowels should be moved daily by some non-gripping method. The diet may be increased day by day until the mother has a good substantial mixed diet, and a palatable meal that will build her up and produce a good flow of milk. What will be food for one person might be poison for another, so I will not attempt to suggest a diet. We should see our patients at least on the second, fourth and eighth to tenth days, oftener if the occasion demands. Watch the pulse, temperature, toilet of the genitalia, breasts, action of the urinary organs, care of the alimentary canal, and instruct the mother that she must get up gradually when the time comes, doing a little more each day until she becomes strong. Secure plenty of rest, lots of time out in the fresh air and sunshine, and see that nothing irritates or troubles her, so that she may be just as normal and secrete a good flow of milk as our modern Holstein cow, if you please.

These are little guides on the switch-board of lying-in and maternal care, and are what we as physicians and obstetricians are supposed to teach.

DISCUSSION.

J. H. Bush, Sterling: What I want to say will have a bearing on this paper and the two papers that were read yesterday. I do not want to say very much, because I am not a professional obstetrician. I do not know a great deal about these

cases, any more than the ordinary practitioner does. I was thinking that if we could get the people to have the notion that pregnancy is not punishment for being married we would have a great deal better control of our pregnant women and the children, probably.

In my practice I am not informed when I will be expected to take care of a pregnant mother. Half the time I am not informed that I am expected to do this, and just that thing has a bearing on the paper of Dr. Morgan. I was called one evening over the phone by a man with a German accent to come quickly to his place. I asked him where I was to go and he did not give me any satisfaction. He simply said, "You come to my place." I did not know where to go. Pretty soon I was called again, and this voice I took to be that of a boy who could speak better English, and he said I was to come three miles out to a certain place immediately, as his mother was sick. While I was getting ready to go I was informed that I was too slow; that the baby had been born. I do not think that birth was ever recorded. Possibly if I had been engaged before I might have confined that woman.

According to statistics, pelvic presentations occur about one time in sixty, whereas breech presentations constitute sixty percent of these. In twin pregnancy we find that pelvic presentations occur about one in four. I have not kept a record of the exact statistics and I do not know. I possibly am as good in keeping account of my cases in my obstetric work as I am in reporting them. I do not report births, because I do not have the blanks to report them on. I feel that there has been a great improvement in this regard, and that physicians, when they are furnished with proper blanks, will report these births. These failures are not always the fault of the individual doctor. Sometimes the registrar of vital statistics has been a little lax in furnishing blanks. I think possibly the necessity for taking greater interest in the birth rate and in taking care of the young children will come home to us as a nation as it has come to France, and I am sure that it will come to us sooner or later.

Dr. Fox (closing): In writing this paper I felt like making an apology, because it is a matter of neglect in view of the number of cases in general surgery; but it is a subject that appeals to me as one of very great importance, one about which a great many of us start out with very little knowledge, and until it really comes to our attention and we find out the need of being a little better equipped, we do not realize the position we are in.

The care in these cases, I believe, is of a little more vital interest than in those of the common ordinary labors I have spoken of, because the chances of infection are great. These labors are prolonged, and our action should be in accordance with that fact. By observing the field from my turn in the road, I find we are apt, a great many of us, to neglect these things.

SOME CONCLUSIONS FROM FIFTY APPENDECTOMIES DONE UNDER LOCAL ANESTHESIA.

LANNING E. LIKES, M. D., AND W. O. SHEL-
LER, M. D., LAMAR.

The ability of an anesthetist depends not alone upon his being able to induce a good,

even anesthesia, but upon his power to choose the proper anesthetic. Needless to say he seldom selects regional or local anesthesia. Therefore, it devolves upon the surgeon to decide when local anesthesia should be given. Unfortunately, too few operators realize the wide scope of local anesthesia. It is the custom of most surgeons to prepare the patients for general anesthetics. Except for a few minor surgical operations, the possibility of the use of local anesthesia rarely presents itself, unless administration of general anesthesia is contraindicated. The reverse should be the case. Every operator should say to himself: "Is it possible to do this work under local anesthesia?" Only if the answer is in the negative should general anesthesia be employed. The question naturally arises: "What are the contraindications to local anesthesia?" In our surgical experience there have been few. All things being equal, most operations about the rectum, vagina, extremities, and all exposed parts of the body, as well as most intra-abdominal operations and many operations on special parts can be satisfactorily done under local anesthesia.

The introduction of adrenalin and its synthetic substitutes has been a marked advance in local anesthesia. The choice of an anesthetic is most important. We have been using novocain and adrenalin for the last six years. It meets the requirements for an ideal anesthesia, being non-toxic, causing no local disturbances, being readily sterilized by boiling, compatible with adrenalin and sufficiently lasting for the most protracted operations. We have used various strengths; before the war we were using one-half of one percent with five drops of adrenalin to the ounce. After war was declared, owing to our limited supply, we began using one-fourth of one per cent with very good results. The weaker solution requires more time for perfect anesthesia. About this time we ran out of novocain, but Dr. O. S. Fowler of Denver shared his supply, so we were not forced to seek a new anesthetic. Shortly after we went into war, the United States Government requisitioned most of the available supply of novocain.

As a result civilian practitioners were deprived of their most valuable local anesthetic. About this time an expert chemist from one of our large drug manufacturing houses, as a result of systematic attempts, succeeded in producing apothesine, a synthetic anesthetic fully as potent and non-toxic as novocain. A great many competent surgeons consider apothesine as good as novocain. The drug differs in two essentials: novocain is made with ethyl alcohol and benzoic acid, and apothesine with propyl alcohol and cinnamic acid.

According to the manufacturers: "Apothesine is the hydrochloride of gamma-diethyl-amino propyl cinnamate. It occurs as small white crystals having a melting point of 137° C. It is readily soluble in alcohol, slightly soluble in acetone and ether, and very soluble in water. It is quite stable and will keep indefinitely if reasonably protected from contamination. The solution in water is neutral to litmus. It is precipitated from solution by alkalies and by the ordinary alkaloidal reagents. If desirable, the solution may be sterilized in the usual manner by heating to the boiling point of water. As is the case with all anesthetics and alkaloids, the best results are insured by the use of freshly prepared solutions".

Dr. Joseph Weiner of New York has used as much as twelve grains of the drug at a sitting and has never seen toxicity. "By a mistake of a nurse, one patient was given six grains in solution to drink; I then injected six grains and removed a perforated appendix, and there were no signs of any toxic effect. Just how much is safe to use I do not know. As far as my experience goes, apothesine is not a toxic drug. My experience coincides with that of Arthur D. Bevan, who wrote in 1917: 'I have recently used apothesine in twenty-five operations, including removal of inguinal glands, resection of the ribs and drainage of lung abscess, circumcision, inguinal and femoral hernia, carcinoma of the face, ligation of thyroid vessels, gastroenterostomy, drainage of subphrenic abscess, and very extensive thyroidectomy. We have used as large an amount as five and one-half ounces of a one-

half percent solution. We have not noticed any toxic effect of any kind nor any interference with primary wound healing.' "

The details of technic are most important. Prof. Braum, one of the masters of local anesthesia, gave it up for appendicitis because his results were not satisfactory. He tried to anesthetize all layers of the abdominal wall before operation, and failed. In our early work we anesthetized layer by layer, but lately we have been anesthetizing all layers before starting the operation. In many of our cases complete anesthesia and painless removal of the appendix has been accomplished with the preliminary injection; no anesthetic being injected after the operation started. In starting the injection, a small fold of skin is pinched up and the needle inserted very superficially, and almost parallel to the skin. A white wheal appears and subsequent injections are made from the already anesthetized area along the proposed line of incision. Superficial infiltration having blocked tactile and sensory nerve filaments, now the deeper nerves are blocked completely, thus eliminating the painful sensation caused by working in the live tissue. It is very easy and one becomes quite skillful after a little experience in injecting the deeper layers. The sense of resistance offered to the needle readily informs you what structures you are injecting. Just before opening the peritoneum, a warm sponge is placed in the incision for one minute, then a syringe of novocain is squirted along the peritoneum and left for two minutes. It is very simple to get this far with the operation, but care must be taken or failure will result. Traction must not be made on the tissues, and blunt dissection is to be avoided; the peritoneum can now be opened painlessly, if traction is avoided. At this state of the operation if the appendix is not easily delivered, a sponge saturated with warm novocain solution is gently placed along the cecum, at the junction of the ileum in the region of the ileo-cecal valve. If congested, the adrenalin will cause sufficient contraction so that unless the appendix is bound down by adhesions it can be delivered easily. If the appendix is bound down, more patience, less traction,

and a little more surgery will be necessary. The meso-appendix has practically no sensation. We never inject around the base of the appendix. It can be crushed and no pain felt. Owing to adhesions, many times it will be easier to remove the appendix by beginning at the tip and working towards the base. Pulling and dragging ought to be avoided at all times. The parietal peritoneum is quite sensitive to manipulations. The intestines can be handled quite freely without pain, but if traction is used a cramp-like pain and nausea frequently result.

In our series of cases we averaged a fraction less than two ounces of novocain with five drops of one to one-thousand adrenalin. Over one-half of the cases were operated upon with a one-fourth of one percent solution, a few with a one-half of one percent, and the last six with a two percent solution. We prefer the two percent solution which we began using in France. In doing secondary suture work, hernias and abdominal work we found that a two percent solution produced a very quick and more lasting anesthesia. The patients were ready to work upon immediately after the injecting was finished.

It has generally been considered that the selection of subjects was most important. Naturally, a neurotic, high-strung individual is not the most desirable. The fact that a patient is high strung and nervous is a very convincing argument in favor of local anesthesia; undoubtedly he will do better under local than under general. These patients require a convincing argument and it is necessary to get their confidence and give them absolute assurance that the operation can be done painlessly. We have spent considerable time with some of our nervous subjects in arguing for local anesthesia, and in very few cases have we failed to convince them of the many advantages. In fat subjects we have used as high as six ounces of one-half percent solution with no toxic effect.

The action of the adrenalin certainly intensifies the novocain. We do not believe the anesthesia acts any more quickly, but it lasts longer. Prof. H. Braun deserves the credit for the addition of the adrenalin. The

constriction produced by it makes an almost bloodless field, and in delicate surgery this is a marked advantage. A few cases of marginal necrosis have been reported. We have never had any trouble at all with our wounds. For our first dressing we apply warm, moist gauze to aid absorption of the regional anesthetic and improve the circulation; perhaps this may be of some benefit in preventing marginal necrosis.

Preliminary injections of morphine are a great aid in work under local anesthesia. The patients' senses should be sufficiently numb so that they do not worry. In our first cases we were using preliminary injections of H. M. C. one hour before operation. This injection was usually sufficient to allay their anxiety and worry. We prefer to have the ears plugged with cotton, as the noise of the instruments will sometimes annoy them. We have discontinued the use of hyoscine. We were operating on a trained nurse; she had received the preliminary injection of H. M. C. and she became quite noisy and delirious, due to the hyoscine. The operation was finished under local anesthesia, and afterwards she told us that no pain or discomfort was felt. We are now using morphine and atropine one-half hour before starting the operation. In our series of cases we average three-eighth grain morphine and one one-hundred and fiftieth grain of atropine. A few of the cases have required the second injection of a sixth or an eighth grain of morphine.

No doubt the question arises: "Why should we use local anesthesia?" First, to avoid many dangers to life of general anesthesia. We have seen patients die of post-anesthetic pneumonia, paralytic ileus, dilated stomach, nephritis and acute dilatation of the heart. All of these cases are results of the anesthesia, not the surgery. We feel quite sure that some of our patients owe their lives to the use of local anesthesia. We operated on a great number of tuberculosis patients, and no doubt general anesthesia would be the cause of hastening the death of some of these. We have had very little post-operative vomiting and gas pains are not nearly so marked as they are in general anesthetic cases. Our local cases feel better at

the end of the first day than our general cases do at three or four days. They seldom have to be catheterized and the bowels are much easier to take care of. In fact, the whole postoperative course is more comfortable. Afterwards the patients are most appreciative and happy. They greet you with a smile the next morning and tell how thankful they are that it was done under local anesthesia. We have had very few complaints of pain during operation. A number of our patients have dropped asleep on the operating table.

What are the disadvantages of local anesthesia? Being very enthusiastic about the work, we can only think of one objection, and that is to the doctor, not to the patient. We believe it requires a little more time and considerably more patience and perseverance on the part of the surgeon. When we consider the many advantages and the lives that will be saved by a more general use of local anesthesia, no doubt the disadvantages are outweighed.

News Notes

Owing to the desirability of getting this issue out with as little delay as possible in the face of a printers' strike, this department had to be curtailed.

COMMITTEES ON MEDICAL LITERATURE.

At a meeting of the Committee on Medical Literature appointed by the State Medical Society at its last annual meeting consisting of Dr. Henry Sewall, Denver, Chairman, Dr. W. A. Jayne, Denver, Dr. O. M. Gilbert, Boulder, Dr. G. A. Boyd, Colorado Springs, Dr. C. D. Spivak, Denver, Secretary, held at the office of Dr. Sewall, all members present, it was decided that the chairman present the report of the activities of the Committee at the next annual meeting of the Society to be held in Denver in October. The following circular was mailed to all the secretaries of the County Medical Societies:

"Dear Doctor:

"At the last meeting of the State Medical Society, a Committee on Medical Literature was appointed for the purpose of preparing a souvenir volume to be published on the occasion of the Fiftieth Anniversary of the Colorado State Medical Society in 1920. This Committee elaborated a plan to collect the necessary material which includes the history of medicine in every county of our State, and will place on permanent record every contribution to medical advancement whether scientific, literary or political.

"In order to be able to secure reliable data and correct information covering the subjects: History of the County Medical Society, reminiscences of pioneer practitioners and names of writers for

medical journals, the Committee on Medical Literature respectfully and urgently asks your County Society to appoint a Committee for the purpose of co-operating with the State Committee.

"As the State Committee on Medical Literature will present its report at the annual meeting in Denver in October it would be highly desirable that your committee should be appointed as soon as possible, so that the report may include the names of its members.

"In case no regular meeting of your society will be held in September, we would urge upon you the advisability of calling a special meeting for the purpose of appointing this Committee on Medical Literature.

"Anticipating with great pleasure your co-operation and hoping to hear from you, we are

"Yours sincerely,

"HENRY SEWALL, Chairman,

"C. D. SPIVAK, Secretary."

Captain W. A. Sedwick who has been stationed at the U. S. General Hospital, Biltmore, N. C., has been transferred to Fort Thomas, Kentucky.

The society has sustained the loss of another one of its members, in the death of Dr. Herman H. Martin, of Denver. Dr. Martin died on August 26th, in Los Angeles, where he had gone to spend the summer with relatives.

The death of Dr. Boswell P. Anderson, resident of Colorado Springs since 1872, occurred August 25th. Dr. Anderson was the founder of Glockner and St. Francis hospitals, and was credited with being the oldest practicing physician of Colorado Springs.

Dr. Samuel Swezey of Denver has been made the superintendent of the National Jewish Hospital for Consumptives, to succeed Dr. Saling Simon, who tendered his resignation in order to devote his time to private practice. Plans for the hospital include the addition of a \$35,000 children's ward of forty beds, the construction of which will begin September 1st.

Dr. William Edmundson, formerly of Denver, was married in Chicago August 15th to Miss Dorothy Peacock. When last previously heard of by the editor, Dr. Edmundson was serving as major in the regular army corps. According to press reports he may locate permanently in Denver.

Dr. F. J. Blackmer of Steamboat Springs has returned home from France to resume his practice after having been honorably discharged from the army.

Doctors May Erect Clubhouse at Estes Park.

The Boulder County Medical society has proposed the purchase of a lot at Estes park for the erection of a clubhouse. Dr. W. P. Harlow was made chairman of the committee to look into the matter and report the proposal to the state medical society. The clubhouse, if built, will be for the use of all Colorado doctors.

The death of Dr. B. F. Griffith of Leadville occurred August 13th. Dr. Griffith had practiced thirty years, most of the time in Leadville. The funeral was held in Denver. The cause of death was diabetes.

Dr. Saling Simon of Denver announces his return from service in the army, and the limiting of his practice to internal medicine, with office at 206 Metropolitan Building.

In consideration of the fine record maintained by Base Hospital No. 29 during the late war, the Denver Chapter of the American Red Cross has been requested to reorganize this unit for service either during military operations or in time of great domestic disaster. Dr. J. W. Ames, former

director of Base Hospital No. 29, has been nominated as Commanding Officer but has not thus far accepted.

Medical Societies

WELD COUNTY.

Resolved: That in the death of Dr. G. R. Pogue the medical profession has lost a physician of splendid scientific attainment. His high class of work was ably sustained by his moral, scientific and intellectual power as well as his courage and manhood. These qualities will always be remembered by his associates.

Resolved also: That the members of the **Weld County Medical Society** extend their sympathies to Mrs. Pogue and children in their bereavement.

Resolved: That a copy of these resolutions be sent to the members of his family, and also to Colorado Medicine, and that they be placed on file in the minutes of the Society.

Dated at Greeley, Colorado, this 21st day of August, A. D. 1919.

DR. ELLA MEAD,
DR. C. A. RINGLE,
DR. W. F. SPAULDING,
Committee on Resolutions.

NEW AND NON-OFFICIAL REMEDIES.

During August the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies:

Calco Chemical Co.: Cinchophen—Calco.

Geck Laboratory: Culture—Lac.

Eli Lilly and Co.: Tetanus Antitoxin—Lilly.

Fred I. Lackenbach: B. Coli Bacterin (Spec. Bact. Vac. No. 12); Gonococcus Bacterin (Spec. Bact. Vac. No. 9); Staph—Acne Bacterin (Spec. Bact. Vac. No. 6); Whooping Cough Bacterin (Spec. Bact. Vac. No. 14); Staphylococcus Bacterin (Spec. Bact. Vac. No. 1); Streptococcus Bacterin (Spec. Bact. Vac. No. 10); Typhoid Bacterin (Spec. Bact. Vac. No. 17); Typhoid-Paratyphoid Bacterin (Spec. Bact. Vac. No. 13).

VACATION DAYS.

A healthful vacation, to get away from home and business, a change of climate and environment, is a very necessary mental and physical tonic for the hard-working American, says the United States Public Health Service. But where to go and what to do is a problem. Hundreds and hundreds of people every year take bag and baggage and go away to rest-up and recuperate. They return broken in health and spirit because the place they selected was insanitary, beset with flies and mosquitoes and the drinking water pol-

luted. Or they go off into the wilds, ignorant of camp sanitation and first aid treatment, and fare equally as bad.

To guard against this the Public Health Service has published a little book, "The Safe Vacation", designed as a guide in the selection of a resort and as a companion wherever it might be necessary to render first aid to the injured. It points the way to a vacation that will be healthful and sets down a number of rules of sanitation to be borne in mind.

The booklet also contains a brief, but necessary chapter on first aid. It illustrates and explains rescue and resuscitation of the drowning, treatment of minor wounds and hurts, snake bite, sun burn and poison ivy. In addition it sets down some rules for bathing, which if observed, would make drowning remote.

No mention of resorts is made. The seashore, mountains, or the country are equally beneficial, provided the resort itself is sanitary. The book simply tells one how to avoid the things that make the vacation dangerous to the health.

Artificial Pneumothorax Treatment of Acute Lung Abscess.

From the Cook County Hospital, Chicago, Goldberg and Biesenthal contribute the histories of three cases of acute pulmonary abscess that were cured by the employment of induced pneumothorax. They believe that this method offers distinctly better advantage of success than the ordinary medical and surgical procedures heretofore used. The mortality after medical treatment has been fifty-four percent; after the usual surgical measures, approximately twenty-five percent. Collecting the sixteen cases thus far reported as having been treated by artificial pneumothorax, including the three in their own experience, the authors find that seventy-five percent have made a complete recovery, twelve percent have been improved, and twelve percent have died.

Goldberg, Benjamin and Biesenthal, Max. The Treatment of Acute Lung Abscess by Artificial Pneumothorax. American Review of Tuberculosis, May, 1919. Vol. III., No. 3.

Tents As Hospitals.

Tents as hospitals were a wartime emergency in France which resulted very favorably. Because of the scarcity of wood, tents were established as hospitals by the forty-second and seventy-seventh divisions, each using nine tents. At the Steeple Chase grounds at Autueil, the American Red Cross placed thirty-nine tents as wards. They had wooden frames and floors and were ventilated by means of eighteen windows. It required six or seven hours with a crew of five or six men to erect such a hospital. When the armistice was signed, the Red Cross was preparing to establish a tent hospital consisting of one hundred and eleven tents.

IF YOU EXPECT TO ATTEND THE OCTOBER MEETING IT MIGHT BE WELL TO MAKE HOTEL RESERVATIONS IN ADVANCE.



FRANK R. SPENCER, M. D.
President-Elect of the Colorado State Medical Society, 1919-1920

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Editorial Comment

THE DENVER MEETING.

While it was to be expected that the registration at Denver would exceed that of meetings held in less populous places, the attendance nevertheless exceeded expectations, there being something over three hundred and fifty names on the registration book. The meeting was remarkable also for the interest exhibited and the way it was maintained through the reading of the very last paper. The entertainment committee deserves the thanks of the Society for providing a program of amusement which was extremely enjoyable and filled in spare time without in any way interfering with the scientific program. According to action taken at the previous state meeting, Dr. McNaught continues to act as President until the first meeting of the 1920 session, when Frank R. Spencer of Boulder, made President-Elect at the Denver Meeting, will be installed. The next meeting will be held at Glenwood Springs, September 7, 8, 9, 1920. A full report of the proceedings of the House of Delegates will be published in the November issue.

ERRATUM.—In an editorial in the September issue of Colorado Medicine dealing with the subject of the annual registration of physicians, the state of Illinois was mentioned in such a way as to leave the impression that it had already adopted such annual registration. We are advised that such is not the case. The measure has been proposed and strongly advocated by Mr. Francis W. Shepardson, who holds the office of Director of Registration and Education of the State of Illinois. The Illinois Medical Journal, official organ of the Illinois State Medical Society, is strongly opposed to this particular measure and its outcome is as yet undecided.

THE PRESIDENT-ELECT.

Dr. Frank R. Spencer, President-Elect of the Colorado State Medical Society, was born at Burlington, Iowa, June 12, 1879. He received his college and medical education at the University of Michigan, graduating from the medical department June 19, 1902. After two and one-half years of graduate study he came to Colorado in January, 1902, and located in Boulder. His practice has been limited from the beginning to ophthalmology and oto-laryngology. Since April, 1905, he has been instructor of oto-laryngology in the medical department of the University of Colorado. During 1918 and 1919 he served at Camp Lewis, Washington, as a Captain, M. C., U. S. A., in the ear, nose and throat clinic. From April to September, 1911, inclusive, he studied in the eye, ear, nose and throat clinics of Vienna and Berlin.

Dr. Spencer is a member of the Boulder County Medical Society, Colorado State Medical Society, American Medical Association, Colorado Ophthalmological Society, Colorado Oto-Laryngological Society, American Academy of Ophthalmology and Oto-Laryngology and American Laryngological, Rhinological and Otological Society. In May, 1908, he was elected a member of the honorary scientific society of Sigma Xi at the University of Colorado. He served as secretary of the Colorado Ophthalmological Society from April, 1916, to April, 1918, when he resigned to enter the army. He is an ex-president of the Colorado Oto-Laryngological Society. In 1915 he was chairman of the eye, ear, nose and throat section of the Colorado State Medical Society. During 1914-15 he was vice president of the American Laryngolog-

ical, Rhinological and Otological Society and again held the same office in 1917-18. At the present time he is a member of the board of directors and of the thesis committee of that society. He was vice president of the American Academy of Ophthalmology and Oto-Laryngology, 1917-18. On numerous occasions he has contributed scientific papers to the general and special journals, on subjects in the field of his specialty.

THE PROBLEM OF PURE MILK.

Among the tangible benefits growing out of the war, few have been so universally recognized as the awakened conscience of the people in matters of public health. The revelations of the draft boards and recruiting offices, both in America and England, have astonished and disappointed all who believed that the physical attributes of the race were amply sustained, in spite of the growing complexities of our social and business life. This quickened interest has already shown itself in many ways. The federal services have begun a vigorous and nation-wide campaign against tuberculosis, malaria and venereal diseases. Free clinics and dispensaries have been established in every populous center. Officers of wide experience have been detailed to address the public everywhere on the conservation of health; the press devotes columns to the eradication of preventable disease, and the clergy is practicing instead of preaching.

In keeping with the doctrine of conservation, the responsibility of the state in the protection of the young has been strongly impressed upon all nations ravaged by the recent conflict. The appalling waste of life from preventable diseases, even during the two decades of the present century, constitutes an indictment against our system of child welfare that will challenge the best efforts of the profession and the public for many years to come. If it be true that the ratio of infant mortality is the best index of our social progress, there is a duty imposed upon organized medicine to lead every movement destined to reduce this rate to the lowest possible minimum.

A rare opportunity is thus presented public-spirited members of county societies in

the more populous centers of Colorado to interest dairymen, city officials and the general public in the problems concerned in the production of pure milk. The entertainment of tourists and healthseekers has become an established business in this state. Many thousands of people annually visit Colorado from the South and East for rest and recreation. They are as enthusiastic over our wonderful climate and wealth of scenic beauty as they are critical of our accommodations, which, in many sections, border on the primitive. Among visitors accompanied by infants, constant complaints are registered against our milk supply. They are amazed to learn that with so many natural advantages conducive to robust health we have failed to properly safeguard the lives of our own children or those of our guests. In practically every large city in the country certified milk can be readily secured, and the tourist expects to find progressive communities like ours ready to supply it to his family while sojourning among us. The usual advice to boil all milk used by babies cannot be followed, in many cases, since hotel proprietors and keepers of boarding places often prohibit the use of gas burners or alcohol lamps. As a result, there were a great many instances of serious alimentary disturbances among our transient population during the past summer.

The health departments in our cities can not be justly accused of negligence or inefficiency. The small sums allowed them for the control of the milk supply are unquestionably expended judiciously, but the subject is so important and so complicated that it demands united effort. Public officials should recognize that constructive sanitation is worth all it costs. They should know, too, that when politics mixes with the milk supply the product is excessively dirty.

The organization of a Medical Milk Commission in any large county society would seem to be one of its most logical responsibilities. Its function would not be to ruin any man's business, but to assist him in offering a more wholesome product at a better price. Wherever a dairyman met the conditions demanded by the commission,

which would automatically become affiliated with the national organization, he would be authorized to place the seal of the society on his containers. The requirements of a milk commission are in no sense prohibitive. They simply involve reasonable mechanical cleanliness in the barnyard and the stable; a wholesome water supply; examination of the cows twice a year; proper grooming of the herd; an intelligent force of milkers; rapid cooling and prompt transportation and delivery.

With a régime such as this once established, the production of a milk supply showing less than thirty thousand bacteria per cc. is not difficult. Do we not owe this to ourselves and the stranger within our gates?

J. W. A.

THE ROLE OF THE TECHNICIAN IN MEDICINE.

The practice of medicine is in a state of flux. New alignments and constant readjustments are being made in response to the demands of the times. The family physician of a generation ago is no longer sole monarch of his domain. The specialist is now occupying much of his territory. Of late the formation of group medicine is the order of the day. The tendency is evidently in the direction of greater efficiency on the part of the practitioner and more benefit to the patient.

The campaign for increased production and elimination of waste in manufacture and industry has not been without its influence on organized medicine. There are numerous steps and mechanical procedures involved in the practice of medicine that could just as well be executed by trained help. The nurse now performs many functions that were formerly, and are even now, outside of hospital practice, carried out by the physician. The specialist, too, has learned to depend on skilled non-professional assistants whom he has trained and is thus enabled to save himself an enormous amount of time and energy which he can utilize more profitably in other ways.

A new craft or profession has therefore

sprung up as an adjunct—a hand-maiden to the medical profession—the class of the skilled technician. One finds him, or her—the female largely predominating—in the laboratory of the clinical pathologist, or working under the roentgenologist, or assisting a surgeon with his anesthetics, or spraying the throat of a patient for the laryngologist. Their activities are manifold as a class, although the individual may be trained for only one particular process. We see the technician turning out histologic sections faultless in their finished technic, or developing radiographs which are marvels of his fine art.

In the army hospitals the blood counts—Wassermann's, Widal's, pneumonia typing and other complicated procedures, not to mention urinalysis and examinations of water, sewage and milk—were largely done by trained help, who had received their instruction either at one of the government schools or had been converted from raw material into the finished or half-baked product in situ—that is, right in camp.

It is a pity that the services of the many technicians the army has turned out will not be utilized in civilian life. A number of them, it is true, have found employment with physicians who have large practices and have no time, inclination or ability to do their own laboratory work. But when we take into consideration the insignificant amount of laboratory work done in the routine practice of the average physician and the vast quantity of diagnostic aid that can be turned out by this army of trained help, the loss to humanity and to scientific medicine is incalculable.

This state of affairs, however, is not easily remediable. Similar disorganization and maladjustments exist in industry and commerce. It is a problem for the political economist to solve.

There is, however, another side to the question of the trained technician which it is well for the medical profession to consider. With all the advantages that trained help brings to the general practitioner and the specialist, we must remember that the technician has his limitations. In the last analysis he is but a highly animated ma-

chine. The blood count may be the perfection of accuracy, the radiograph a true portrayal of the anatomic relation; the data furnished still requires careful interpretation and well-balanced judgment based on personal experience and up-to-date knowledge of current progress, together with a good working knowledge of general medicine. The radiologist or pathologist is after all a consultant, who not only helps the physician or surgeon to interpret the findings, but aids in pointing out what particular laboratory procedure would make diagnosis more certain. Then, only by a correlation of the clinical and the laboratory data is the desired end secured.

A word of caution, therefore, against placing too much faith in the technician is not out of place, particularly that variety who ambitiously set up shop for themselves and advertise their accomplishments to the profession.

Clinical and x-ray laboratory findings have not as yet reached the stage of infallibility. There is great danger of these scientific branches of medicine falling into disrepute if the work of the technician be not carefully supervised, balanced and interpreted by the respective specialist, who must necessarily be a member of the medical profession.

P. H.

THE TECHNICIAN IN ROENTGENOLOGY.

The preceding editorial touches upon a live topic. The writer of it, being engaged in clinical laboratory work, unquestionably has exact knowledge as to his own experience with technicians, and it would appear from his statement that a layman can be trained to do all the technical work of a clinical laboratory and leave the interpretation to the physician trained in that branch of medicine. He, however, places the x-ray laboratory in the same category with the clinical laboratory, while the present writer, from the standpoint of his own specialty, believes that x-ray technical procedures are of a peculiar character which does not allow of their being placed as a whole within the

realm of a technician's efforts; therefore, it seems desirable, without wishing to be in any way controversial, to point out some of these differences.

In roentgenology as now developed the taking of x-ray plates is only a part of the diagnostic means employed. In gastrointestinal work, for instance, prolonged study under the upright and horizontal fluoroscopes contributes more to the general sizing up of function and pathology than does the concurrent record given by plates. In the fluoroscopic room the stomach is watched in action and the matters of peristalsis, tonicity, spasm, deformities, etc., as well as the actual emptying through the pylorus, are observed and passed upon. The rate of progress of the ingested meal is taken into account, and palpation is resorted to in order to locate tenderness in relation to organs actually in the observer's view. To correctly carry on such an investigation requires a knowledge of anatomy, physiology and pathology, and only a physician is presumed to know this. A technician having such knowledge would be, in effect, a doctor in all but the matter of therapeutics. He probably does not exist.

It must then be obvious that for fluoroscopic work, whether gastrointestinal, thoracic or other, only a physician is equipped with the proper knowledge and experience. There remains, then, the roentgenographic feature for the technician, and even in that one would far rather trust a physician with average technical skill than a technician who can take unusually good plates, for the same reason which applies in the fluoroscopic room; for a knowledge of anatomy, physiology and pathology come into play here in handling the patient, in placing him for the most advantageous view with respect to his pathology and for determining the proper time to catch a certain desired stage, if it be a stomach or kidney case.

In the clinical laboratory, the chemical and physical measures may be carried out according to absolute rules which apply to all cases, and the diagnosis can be made at leisure; in the x-ray laboratory, no fixed rules apply to all cases, but procedures depend upon judgment exercised at the time,

and the diagnosis is partly made coincidentally with the examination. A very good way to decide how to handle a case is to apply the condition hypothetically to one's own family. If your wife or mother required a thorough roentgenologic examination, would you send her to a roentgenologist who you knew would leave the actual work to a technician?

It would seem that the reason for any doctor's employment of a technician is that he is either too lazy or too busy to do this work himself. If too lazy, he is also probably unfit to make a good diagnosis or interpretation; if too busy, he should take pains to employ a person able to do the work required: in a clinical laboratory, perhaps a non-medical technician; in a roentgenological laboratory, by all means a trained doctor.

Current Comment

A LITTLE LEARNING — AND THE ROCKY MOUNTAIN NEWS.

C. S. BLUEMEL, M.D., DENVER.

It is more than a couple of centuries since Pope wrote his Essay on Criticism, and penned his well-known couplet about the danger of a little learning. But if a little learning was dangerous in his day, when erudition was confined largely to classic and polite literature, then how much more perilous in a scientific age is the possession of a smattering of knowledge.

And yet a little knowledge seems to be no deterrent to the editorial writer of an occasional modern newspaper. One drop of knowledge in the head of such a semi-savant seems, by the very freedom of its environment, to bubble and froth and ferment with the utmost vigor, so that soon the editorial cranium appears to be all but bursting with the pressure of wisdom.

This point in the fermentative process having been reached, the editor now delivers himself of some oracular dissertation.

The result may be a discourse on the rise and fall of the Roman Empire, a discussion

on Flemish Art, a disquisition on the Napoleonic Code, a rigmarole on the radiance of radium, or a solution vouchsafed on the problems of modern medicine. The editor writes on one subject or the other according to the original minim of information or misinformation that has effervesced within his brain. While effervescing, he will annihilate whole centuries of thought with one scratch of his head and one scratch of his pen, and will write *Finis* to any controversy. If he feels strongly about the controversy, he will write an anthem of *Finises*, much as a church organist would play a five-fold Amen.

And this brings to our mind an editorial writer of the Rocky Mountain News—by name Kent Conser Shaffer, usually known as Kent Shaffer. The particular subject on which he feels strongly is modern medicine, and we frequently behold him writing five-fold *Finises* to the medical problems to whose solution earnest men are still devoting their lives. Kent Shaffer is the son of John C. Shaffer, the millionaire owner of a string of newspapers, and as the son of a rich man young Shaffer is privileged to use the editorial columns of the News as a playground. There could be nothing particularly objectionable in this if he had the educational qualifications for the thing that he undertakes, but when he attempts to interpret modern medicine for his father's readers, he is seen to be woefully ignorant and intolerably prejudiced.

This fact in itself affords no occasion for comment, but what we wish to call attention to here is the indirect methods by which this writer seeks to enforce his views.

When a reader of the News takes exception to Shaffer's eccentric opinions and misrepresentations, and seeks to express a fair comment on them in the correspondence column, he finds that Shaffer takes advantage of his editorial position to withhold his opponent's letter from publication till interest in the subject has largely subsided. In the meantime Shaffer is in a position to prepare a rebuttal, should he wish to attack his opponent's views. In this little game Shaffer is umpire as well as contestant, and he

exploits his advantage quite beyond the bounds of courtesy.

But this advantage is not sufficient for the editorial writer, since he is still unable to support his weak positions and arguments. He therefore seeks further advantage by writing letters to himself under the alias of Kent Conser, and in this guise he renders first aid to his own editorials. Thus we have the paltry spectacle of Shaffer playing peek-a-boo on the editorial page, and dodging from column to column in dual personality.

It is difficult to know how to interpret such maneuvering. When a man talks to himself we are apt to regard him as insane. Perhaps the same test does not invariably apply when a man writes letters to himself. In the case of Kent Conser Shaffer we are inclined to think that this is merely an expression of his disingenuousness, and that he is but trying to double up on his little learning.

Original Articles

PROGRESS AND PROBLEMS IN MEDICINE.*

F. H. McNAUGHT, M.D., DENVER.

The problem of reconstruction is the shibboleth that is holding the world's attention today. The late war brought out, or at least accentuated, the fact that the world's progress is not along lines altogether satisfactory to the great mass of the people.

We shall soon be living under new environments. The government has gone through travail such as it never expected to bear, and as a result of its exertion higher expectations are held for the improved condition of its people. Is the present professional status strong enough to keep pace with the times? An abstract of our accomplishments may at least help us to solve the problem.

When the command was given, "Let there be light," the history of medicine began.

*Presidential address, delivered at the annual meeting of the Colorado State Medical Society, October 7, 8, 9, 1919.

It is the history of ages. Its chronology is unquestioned. Down through the centuries as world progress has been made, medicine has kept in step and done its part for the advancement of human activities and endeavor. It has met new problems as they arose, and has delved into nature and discovered many secrets that led to improvement in the healing art in all its branches. Yet, in the last one hundred years there has been greater progress in medicine than for centuries before. The human salvage of today is in marked contrast with that of the remote past.

The special branch in medicine that can claim honor and has done so much for medical progress and for the benefit of humanity is bacteriology. It has solved the problem of health, changed sanitary conditions, and brought to our attention the principles of preventive medicine. It will make immunology one of the leading specialties. Probably no discovery was ever given us that has brought about so much good, saved so many lives and given in the same degree to the advancement of the commercial and economic life. It has marked an epoch in medicine of untold value. It is within the memory of a few of us that this discovery was elaborated and its principles applied. Prior to the application of these principles, cholera, typhoid, typhus and many other bacterial diseases took an annual death rate that was appalling. We have vivid recollection of the fatalities which followed these infectious diseases. In 1898 in our war with Spain it is recorded that twenty percent of the army suffered from typhoid fever, and that it caused sixty percent of all the deaths in the war. In 1910, when twenty thousand of our troops were assembled on the Mexican border, they were all given typhoid prophylaxis, and as a result only one soldier suffered from the disease. This is in marked contrast with the records of the Spanish war, when one in every five men contracted the fever. In our late American expeditionary forces, had the same rate prevailed, four hundred thousand would have suffered from this disease alone, while our records show that only one thousand contracted it. Many examples showing the control we have

gained over infectious diseases in the past one hundred years could be cited. All of these fevers which have placed their death hands upon millions of people are now held in abeyance and control, and the mortality rate from their invasion is nominal.

The advance in all branches of medicine for the past four score and ten years is almost beyond appreciation and belief, and, without a doubt, in a very short space of time, when further investigation is made as to the cause of the late epidemic of influenza, medicine will show the same control of this fatal disease as it has shown in the control of those of the past. These results have been brought about through individual effort, and not through combined action. No demand has been made upon the individual members of the profession that has not been satisfied.

When the great war of history was provoked by an insidious and vicious foe, when approximately 24,000,000 of the best manhood of this country were made available for service, when 2,800,000 were chosen for active duty and training, when 2,086,000 were sent overseas and 1,390,000 were sent to the battle lines, there were always a sufficient number of medical men to look after their welfare in health and in sickness. Physicians have always qualified for service when request was made of them, no matter how great the danger. There never was a time of emergency when the profession did not give of its best efforts, both individually and collectively. In 1852, in Virginia, when the terrible epidemic of yellow fever prevailed, forty medical men who volunteered their services for the care and treatment of those suffering from this pestilence died. In the same year, when typhus was so prevalent in New York, fourteen house surgeons of Bellevue hospital contracted the disease and died. In each case volunteers from the medical branch came forward and filled their places, although they well knew they were subjecting themselves to as great a danger as any soldier ever faced. In all epidemics and war emergencies medical men have supplied every demand the government or private interests have made for their services.

Could any remodeling of our present structure bring about better results?

Medicine of today occupies an independent position in the social and economic world. Outside of the great Rockefeller endowment, concentrated wealth and the government have contributed only in a small measure to the advancement of medical service. Pasteur gave to the profession and to the world, without price, the results of his bacterial investigation which revolutionized world medicine and has been the means of saving millions of lives in the prevention and cure of disease. Yet, when he asked his government for fifteen hundred francs—approximately three hundred dollars—to assist him in his great work for humanity, his request was refused. Governments are more prodigal in their contribution for the care and development of vegetable and animal life than they are in furnishing measures of relief and protection for the people in sickness or distress.

A heritage has come to the medical men of today—a heritage crowned with past endeavor and success in medical achievements. This heritage is not given us to keep and preserve, but to build upon, to add to, and to pass on. It is a heritage of progress. There is much new work looming up for the future. There will be changes that will broaden the fields of medical activities and make for new conditions, and if we of today are to keep this legacy that we have received, and add to its honors, we must continue giving the same effort for the future that has been given in the past. The physical and human destruction that has lately taken place will demand much constructive effort, and the medical profession will be called upon to contribute in a large measure in this work.

Some startling facts were brought to our attention when the great army of our young manhood, the pick of civilization, was assembled for service. The rigid physical examination that they were subjected to showed that approximately one-third had marked defects, and they were rejected. If this number of defects were found in the pick of our population, what must be the morbidity in the great mass of industrial

workers? In the great problem of rehabilitation now under way this great morbidity must be considered.

There are numerous causes for this condition. The one that seems most pertinent and has to do, in a large measure, with our present and future population, with restitution, is the venereal infection. The surgeon in the operating room is brought face to face with this problem, when so many cases of sterility, both in men and women, are found due to conditions that might have been prevented and the causes exterminated in two or three years if positive and heroic action for control of this disease had been taken. This infection is filling our asylums and neurological hospitals with defectives, is adding its quota to the institutions for the blind and giving a higher morbidity and mortality rate than has yellow fever, cholera or many another infectious disease. It reduces man power and diminishes the industrial output. Its ravages have come down through the years. It is an ancestral reflection, materializing in future generations.

The government realized the great danger this infection carried and took special precaution and action to protect its army from the infection. Why should it not use its same great influence and power to protect its material army and future population from an infection more insidious in its invasion, more destructive in its action, more lasting in its effects than any ever known?

The medical profession recognizes this condition and yet has been powerless to abate it. Open propaganda, frank and free discussion of this preventable condition, would bring about results that would redound to the honor of the profession. There is a great field of usefulness along this line of education; yet, under the present social status, will it be possible for the medical profession to overcome entirely the danger of this disease? The proper solution of this problem means for progress, for diminished morbidity; an improper solution means a failure of effort, giving a rule of endeavor that will not meet with success. The proper solution, it seems to me, embraces a central power, whose advice or commands must be

recognized and carried out. The federal government has prohibited the manufacture and sale of alcoholic stimulants, which have heretofore been considered a social necessity, yet is slow to protect its people from a social condition that has done more harm, produced a greater number of deaths, and disturbed and destroyed homes to a greater degree than have alcoholic beverages.

The government is now awakening from its lethargy, is recognizing the defectiveness of its man power, and is coming to the assistance of the profession for its improvement. Congress has in the near past made a moderate appropriation for venereal control, but has attached a rider or condition to this appropriation which materially limits its use. This appropriation should be multiplied by millions. Federal laws for the abatement of venereal conditions should be enacted, more stringent in their action and enforcement than at present. War measures for the control of venereal infection were positive and the results startling. The people should be entitled to the same protection in peace as in war from an infection of this nature.

Another problem that has received the attention of medical men and medical associations is the standardization of hospitals. It is a movement that should be associated with and be a part of medical advancements and, when fully consummated, represent group medicine in its highest efficiency. It would bring about higher medical standing in medical and surgical service and give superior educational advantages for interns and nurses. Great success in surgery depends upon hospital environments. The standardized hospital should be one so developed that any emergency that might arise in the patient, or the operation, could be met at once. There must be cooperation in all the specialties if the best interest of the patient is to be conserved.

This subject is now receiving the attention of a great surgical organization, an organization that stands for the highest principle in medicine, an organization that has checked, in a great measure, commercialism and collective bargaining in medicine by excluding from its membership those found

guilty of these practices. It is safeguarding the people by exposing those who would trade on the pathological human, and it is now, through its influence, in conjunction with hospital and health associations, hoping to improve hospital conditions. Through questionnaires and personal inspection, data are being gathered which, when assembled, will give a basis for the standardization of hospitals in this country and Canada. This is a most worthy effort and should receive the endorsement and support of our entire profession. A trinity of interests is to be considered in this undertaking—the public, the medical profession and the hospital managements. These interests should be compatible. Will they be coordinated in working out this problem? There can be no question as to what the desire of the people would be in the matter, as the sick and injured of all classes are entitled to the same efficient care in all hospitals. The medical profession encourages standardization, as it will be in accord with medical progress in advancing medical efficiency; it will bring improved conditions for research and laboratory work, and give modern methods for diagnostic findings.

Many of our civil hospitals are supported through church affiliations, by endowments or private subscriptions, interests that may not be in a position to contribute to the improvements that will be necessary for this standardization. Is not this a subject of such great importance that it should also receive government support? The government is now establishing, or has established, great hospitals for the care of its disabled soldiers, and is dispensing millions of dollars for vocational education for its employees with permanent defects. Should it not contribute most liberally to our civil hospitals, thereby encouraging them to favor this standard of efficiency which the medical profession and its organizations are now working for?

The government should give for the industrial workers as high a hospital standard as it gives to the employees in the government service. There should be no discrimination between civil workers and government workers in health problems. The gov-

ernment, when threatened by danger, commandeered, regulated and took charge of many of our products; it spent millions of dollars to safeguard our interests. Why should it not contribute of its interest and finances to the hospitals, which are the avenues for the most scientific treatment of its subjects? Why should not the army of our material workers receive the same care and protection in sickness as are given those under direct government control? Should they not be entitled to the same treatment as those suffering from a morbidity contracted under government employ?

The profession and medical organizations have heretofore been the channels for giving to the world suggestions for the control and prevention of disease. In the great process of reconstruction and rehabilitation that is now under way, and which is to be under direct supervision of the government, medical interests should be represented and have a voice in any action the government may take in medical matters. We should have at Washington a representative, a secretary of health. Sanitary, health and hospital problems could then be brought directly under the observation of our legislative bodies. Such a representative would be in a position to bring before Congress measures for legislative enactment and enforcement which would materially assist in our efforts for the upbuilding of medical standards, in the advancement of medical reforms, and especially in safeguarding the people against preventable diseases.

Unity of action by the profession in petitioning Congress to establish a department of health would at this time probably bring about desired results. If such a department were given us many reforms which are for the benefit of the people would materialize. Through the enactment of proper laws infection would be under better control than at present, and our morbidity and mortality rates would be diminished. Could the people but realize the defective manhood and womanhood brought about as the result of preventable causes there would be no question as to their request for a central medical power which could abate many of the con-

ditions now existing as the result of improper disease control.

Appropriations by congress for the United States Public Health Service amount to millions of dollars, to be distributed between the many bureaus of health that now exist. Could these bureaus be centralized under the supervision of a medical cabinet officer, better results would be obtained, appropriations would be placed where they would be of greatest benefit, and medical progress would be made along lines in keeping with rehabilitation. Man power is being considered as never before; state and federal legislative bodies are devising means for the improvement of human conditions. Medicine is lengthening and strengthening lines already projected to meet the problems and progress of human existence.

TUBERCULOSIS IN CHILDREN.*

GEORGE H. CATTERMOLLE, M.D., BOULDER.

Recent studies have made it more nearly certain that tuberculosis is contracted chiefly in infancy and childhood. The percentage of children who are infected before the age of fifteen years varies according to locality.

In this part of the world by far the greater number apparently are infected with the human type. As there is still uncertainty regarding the frequency of bovine tuberculosis, both in children and adults, it seems best to leave the question open as to the importance of bovine infection. One point seems certain—infants who are cared for by tuberculous mothers are commonly infected in the first few months of life, and such cases usually prove fatal. Combe, in an article in *Le Nourrisson* (1916, 4, 347), says that infection during the first eighteen months means death within six or eight months. While that statement is probably true for France and many other parts of the world, it is not absolutely true for Colorado, for we see many cases of severe tuberculosis in infants who apparently recover from the disease.

We believe that the younger the child is when infected the less likely it is that he will recover. In children from birth to four years of age a positive cutaneous tuberculin reaction usually indicates active tuberculous disease. After four years of age a positive reaction means that the child has been infected and has become sensitized, but in the majority of cases has no active disease. Such reaction shows a certain degree of acquired immunity.

Between the ages of four and fifteen years there are not many children who show active tuberculosis. Before four years of age tuberculosis of the bronchial glands, meninges, peritoneum and lungs is common. After four years the most common seat is in the bronchial glands; the cervical glands are also often involved, and, in a smaller number of cases, the joints.

The mortality from tuberculosis is low between the ages of four and fifteen years, even though the number of children who react to the skin tests gradually increases during these years. These children have a high degree of resistance to tuberculosis and it is then that they should acquire immunity. In those children who have active lesions in the joints, glands, or peritoneum there is a marked tendency to heal.

The tracheo-bronchial glands are infected in a large proportion of the children who show a positive tuberculin reaction. There are more of these glands about the root of the right lung than on the left side and this is why we usually find greater dullness and rougher respiratory sounds on the right side. This is one of the diagnostic signs in children. The tendency to greater involvement continues in the right apex so that in adult life we usually find the older and more advanced process there.

Children who show a marked skin reaction often appear in the best of health. Such children may show no signs of enlarged bronchial glands when they are well, but when they have any acute infection, such as measles, pertussis or influenza, these glands enlarge and produce cough, dullness on percussion, roughened and prolonged respiratory sounds, increased vocal fremitus, and d'Espine's sign in the back.

*Read at the annual meeting of the Colorado State Medical Society, September 9, 10, 11, 1918.

After the child has recovered from the acute disease the glands gradually return to their usual size and condition. If the child is poorly nourished, or if convalescence is delayed from any cause, the glands may not only remain large, but it is reasonable to suppose that infection may extend from them to other tissues.

In following such cases it is the rule to find that with each acute infection these glands enlarge so that the condition has been called recurring tuberculous bronchial adenitis. This can hardly be designated a latent tuberculous condition. It is an infection which is held in check as long as the child's resistance is good. Such a child shows a prompt and marked reaction to the skin test, due to the presence of antibodies in excess.

If the child is overwhelmed, as in tuberculous meningitis, there may be no reaction. In severe tuberculous conditions the skin reaction may be faint or absent, but if the child improves it will show a well-marked reaction at some later time.

In children who lack sufficient resistance to combat the infection there is weakness, anemia, loss of weight, cough and maybe fever. Here the fight is on between the infection and the individual. He has acquired some immunity so that he is not likely to have an acute form of the disease. The lung, which is the most susceptible tissue, becomes involved, and unless his resistance improves he may later show some one of the many types of pulmonary tuberculosis.

Only a small number of children die of pulmonary tuberculosis. This is due to their active metabolism and to the out-of-door life at this age. They escape the serious forms of the disease during childhood, but they probably furnish the cases of tuberculosis seen in later life. Boys who have had such infections between the ages of four and fifteen years and who have made poor recoveries are the ones that we are looking for in the army examinations. They will break down under strain, fatigue, exposure, and poor food.

An animal which has an active tuberculous infection cannot be reinfected. It seems reasonable to presume that a child with tu-

berculous bronchial glands may be protected from further infection, and that if his general condition remains good he may become immunized.

To maintain a child in the best physical condition he must have plenty of suitable food, out-of-door life, sunshine, and he must be properly dressed and housed. There is no specific treatment for the disease. Tuberculin can be used in certain chronic conditions which are not progressing favorably. Heliotherapy is of great value.

Infants and young children should be removed from parents and others having open tuberculosis. Tuberculous persons having coughs should wear masks when in the company of children.

It is very difficult to diagnose tuberculosis in children from physical signs in the chest. The skin tests should be used in order that we may know all of the children who are infected with tuberculosis. I am in favor of a general test of all school children. It would enable us to study the progress and development of the disease and to determine whether those who are infected in childhood or those who are infected in later life are the ones who make up the army of consumptives.

My table includes tuberculin skin tests made on four hundred and nineteen children. Of these, forty-seven percent showed positive reaction and fifty-three percent were negative. One hundred and sixty-five private patients showed forty-two percent positive and fifty-eight percent negative. Two hundred and fifty-four charity patients showed fifty percent each of positive and negative reactions.

Of one hundred and sixty-seven children tested at the University dispensary, forty-seven percent were positive and fifty-three percent negative, even though a large part of these children were from families where there were one or more cases of tuberculosis.

Of eighty-seven children examined at the orphans' home, fifty-seven percent gave positive and forty-three percent negative reactions. This was the highest percentage of positive reactions that I obtained in any group of children. At first it seemed quite

remarkable, as these children appeared well nourished and in better than average health. I believe the explanation for this high percentage of reactors among the children in the orphan asylum was due to their having come from homes where one or both parents had died of tuberculosis.

The well-nourished, healthy appearance of most of these children conforms with the rule that children may show marked skin reactions and still appear in perfect health. At such times they show very few signs in the chest, but when they contract any infectious disease the chest signs become apparent and symptoms persist for a longer time than in normal children.

An attempt was made to get a history of exposure in all children tested. We succeeded in getting such a history in two hundred and two cases. Among one hundred and one children who showed a positive reaction, ninety-two had been exposed to tuberculous parents and nine had not had such exposure. Among one hundred and one cases that gave a negative reaction, sixty-

one had been exposed to tuberculous parents and had escaped infection, while forty had not been exposed to infection in the home. This is a little more evidence of exposure in the home as the chief cause of tuberculous disease in children.

TABLE 1.
Results of Cutaneous Tuberculin Tests by Ages.

Age, Years.	Positive.	Negative.	Total.
1	15	16	31
2	9	14	23
3	11	18	29
4	13	16	29
5	13	19	32
6	9	34	43
7	24	14	38
8	15	20	35
9	18	25	43
10	15	12	27
11	20	16	36
12	18	9	27
13	12	4	16
14	6	4	10
	198	221	419

TABLE 2.
Showing by Ages the Cutaneous Tuberculin Tests Made on Private Patients in Denver and Boulder, and on Children at the Dispensary and the Orphans' Home.

Ages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Totals	Per-centage
Boulder	+	2	2	3	2	7	2	6	6	4	6	5	3	5	2	55	+ 48%
	—	5	5	2	6	4	11	4	4	9	2	5	2	1	0	60	— 52%
Denver	+	5	1	0	1	0	0	4	0	1	1	1	1	0	0	15	+ 30%
	—	8	5	5	0	3	5	1	3	2	0	2	0	1	0	35	— 70%
Orphans	+	4	2	4	4	1	3	5	3	6	2	7	8	1	0	50	+ 57%
	—	0	2	2	5	4	6	4	4	3	2	2	1	0	1	37	— 43%
Disp'ary	+	4	4	4	6	5	4	9	6	7	6	7	6	6	2	78	+ 47%
	—	3	2	9	5	8	12	5	9	11	8	7	6	2	1	89	— 53%
Totals	+	15	9	11	13	13	9	24	15	18	15	20	18	12	4	198	+ 47%
	—	16	14	18	16	19	34	14	20	25	12	16	9	4	2	221	— 53%

THE VON PIRQUET TEST AND RESULTS
OF ITS USE IN FOUR HUNDRED
AND SIXTY-FOUR COLORADO
CHILDREN.*

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The evidence in support of the specificity of the tuberculin test is conclusive. Von Pirquet, who is eminently qualified to speak

with authority on this matter, states categorically that a positive cutaneous reaction invariably spells tuberculosis. A negative reaction, on the other hand, does not exclude with certainty the possibility of this infection. A long period of inactivity or a state of latency is apt to result in a reversal of a positive reaction. Tuberculous meningitis and miliary tuberculosis are accompanied invariably, and chronic pulmonary tuberculosis frequently, by a negative reaction. Most infectious diseases, notably mea-

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sles and whooping cough, cause a temporary disappearance of a positive reaction. Repe-tition of the test in the infected will result in increased reaction; but, in the tuberculo-sis-free, sensitization to tuberculin cannot be induced by this means, or by any other at our command; it can only follow infection with viable tubercle bacilli.

The cutaneous test, while lacking the ex-actness of the intracutaneous and subcutane-ous tests, presents such obvious advantages by reason of its simplicity and harmlessness that it has been universally adopted as the method of choice, and nearly all statistics on the frequency of tuberculosis are based on this particular mode of tuberculin appli-cation.

Tuberculosis is a startlingly common in-fection during infancy and childhood. In Vienna, according to Hamburger and Monti, ninety-four percent of the children of the poor are infected at puberty. Von Pirquet found, under one year, five percent, and at ten to fourteen years, eighty percent tuber-culous. Figures from other European coun-tries indicate a prevalence of from fifty to eighty-three percent at or about puberty. In this country the tuberculosis situation is de-cidedly less menacing. In New York, where conditions approximate those that prevail in continental Europe, Fishberg finds eighty-three and seven-tenths percent infected at the age of fourteen. Of all the exposed children, fifty-four percent reacted positive-ly as compared with fifty percent amongst the non-exposed. Hess of the same city finds, under one year, five percent positive, and from two to five years, seventy-five percent. Veeder and Johnson of St. Louis, where the mode of living is fairly representative of the average large American municipality, find, under one year, eleven percent, one to two years, twenty-four percent and twelve to fourteen years, forty-eight percent tubercu-lous. Cattermole finds only twenty-five percent of Colorado children harboring tuberculosis.

The profession of the East has for years maintained that climate is a negligible fac-tor in the treatment of tuberculosis. We in Colorado concede that the advanced con-

sumptive has but little to expect from a change to our climate; in early cases, how-ever, we feel that this section of the country offers advantages that cannot be ignored. This belief has, to my knowledge, never been substantiated, nor has it been successfully refuted. It rests wholly upon impressions. If there is any element in our climate capa-ble of exerting a favorable influence upon the progress of tuberculosis, it is logical to assume that the same force will be found operative in the prevention of tuberculous infection amongst our children; and should infection supervene, it would be reasonable to expect that it would pursue a relatively benign course. A desire to ascertain in what manner climate modifies tuberculous infection and tuberculous disease in our chil-dren is in a measure responsible for this work.

From August, 1915, to May, 1918, I have performed the von Pirquet test five hundred and twenty-five times upon four hundred and sixty-four unselected patients, ranging in age from a few months to eighteen years.

The acutely ill were excluded from this study. Nearly all the children tested are of Jewish parentage, living under conditions comparable with those prevailing amongst the poorer working classes of the larger cities. The majority lived in a section of the city copiously infested with the poorer Jew-ish consumptives, and had abundant oppor-tunity for infection. Most of the children were of tuberculous parents, many of whom had been inmates of sanatoria where they had had thoroughly inculcated rules of prophylaxis, which were scrupulously observed in many of the homes. The material con-formed in kind with that upon which most reports bearing on the frequency of child-hood tuberculosis are based.

Of the four hundred and sixty-four chil-dren tested, two hundred and nineteen were male and two hundred and forty-five female; thirty-nine and eight-tenths percent reacted positively, the number of positives among the males being two percent in excess of that found in the females. Under one year, almost twelve percent reacted positively; ten to fourteen years, fifty-five percent; and fourteen to eighteen years, only fifty-

one percent. The highest number of positive reactions was noted during the eleventh to thirteenth-year period, with sixty-six and seven-tenths percent; and the lowest at the fifth and sixth-year period, with only thirteen percent positive. My figures do not show that uniform increase from year to year in the percentage of positive reactions which characterizes the findings of others, and I am at a loss to adequately account for this deviation. Two hundred and sixty-one children were Colorado born, and of these thirty-four and five-tenths percent reacted positively. I include in this category a small number brought here under the age of one year. A comparison of the foregoing figures with those obtained at other sources warrants the conclusion that tuberculous infection among children in Colorado, while not as frequent as in Europe, is certainly no less frequently observed than in other American cities, barring New York.

Prolonged and intimate contact, such as obtains when a child lives under the same roof with a tuberculous parent, has for years been recognized as the most important cause predisposing to childhood infection of tuberculosis. All other contributory factors play a subordinate rôle. I found that of the two hundred and seventy-four children having a tuberculous parent (whom, for the sake of brevity, I shall designate as "exposed"), fifty-three and six-tenths percent reacted positively; of the one hundred and eighty-one not exposed in this wise, only twenty-three and two-tenths percent, or less than half, reacted. Of the non-exposed, one hundred and thirty-five were born in Colorado; and only twenty and seven-tenths percent of these reacted positively. Of the girls in this category, sixteen and four-tenths percent reacted positively, as compared with twenty-five percent of the boys. It is highly significant that of the one hundred and twenty-six children born in Colorado and exposed to tuberculosis, fifty-six and four-tenths percent of the girls and forty-two and three-tenths percent of the boys reacted positively.

On theoretical considerations, we should anticipate that the individual with closed

tuberculosis would prove relatively innocuous as a source of infection. This was not found to be the case. Of the one hundred and eighty-one children exposed to a parent with open tuberculosis, fifty-eight percent reacted positively, and of seventy-eight cases exposed to a closed case, thirty-eight and five-tenths percent reacted; whereas, non-exposed children react only to the extent of twenty-three and two-tenths percent. Of those children whose father harbored closed tuberculosis, only twenty-seven and six-tenths percent reacted positively; and when exposed to a mother with closed tuberculosis almost double the number, or forty-eight and four-tenths percent, showed positive reactions. An observation deserving recognition is, that of the female children exposed to a father with closed tuberculosis, forty and seven-tenths percent become infected; whereas of the male offspring, similarly exposed, only ten percent, or less than one-fourth react positively. On the other hand, boys and girls exposed to either parent with open tuberculosis react in about equal ratio; eight children had both parents tuberculous, and seven reacted positively.

Marked reactions are less frequently observed in children when the mother is the source of infection. They are about two and one-half times more frequent when transmission is through the medium of an open case. They are observed somewhat more often in the female than in the male, twenty-one and one-tenth percent and sixteen and seven-tenths percent, respectively, owing perhaps to the more delicate texture of the skin. The percentage of pronounced reactions is highest in the first year of life, when seventy-five percent of the positives react in this manner; and in the twelfth to fourteenth-year period, when eighty-eight percent of reactions are of this type. They are almost never found in the unexposed children, but are just as frequently noted in children reared in a faultless environment, and are not incompatible with normal physical development. They are definitely less frequent beyond the age of ten than below, lending weight to the theory that, in the absence of unfavorable circumstances, the tendency for childhood infection is to be-

come latent; they are less frequent in the clinically tuberculous and in the presumptively affected than in those free from suspicion of activity.

Tuberculous infection is said to exercise a retarding influence upon the physical growth of the child. I find that of children reacting positively sixty-one and eight tenths percent are below normal in development, twenty percent normal, and nineteen and five-tenths percent above. Of those with negative reactions, fifty-six and one-tenth percent are below normal, thirty-one percent normal, and twelve and six-tenths percent above normal. The discrepancy is so trivial that it fails to corroborate the statement relative to the supposedly baneful effect of tuberculosis on child-development. Infected children under seven years of age show relatively less developmental impairment than those above this age. In determining the state of development, the height, weight and chest-circumference formed the criteria.

Two hundred and ten children examined belonged to eighty-five families. It is a fact deserving of emphasis that all members of the same family reacted uniformly in fifty-five instances. This uniformity was even more pronounced in the twelve families which each included four children; in nine of these twelve families all members reacted alike not only qualitatively, but also quantitatively. When the outcome of the reaction was not identical in all members of the same family, the positive reaction was encountered in the older or oldest members in about seventy percent of the cases. These findings show that a considerable period intervenes between exposure and infection, and that the disposition to tuberculous infection is strikingly similar in different members of the same family.

One hundred and eleven tests were performed upon fifty-four children at intervals of several months to two and one-half years. In forty-three the outcome was the same with both tests. In eleven, a negative re-

action became subsequently positive; and only once did a positive reaction become negative. In six children the first positive was more pronounced, in seven, the second. The obvious deductions warranted by this experience are that an infection once contracted is apt to persist over a long period of time and exercise a sensitizing influence upon the tissues; and that the frequency of tuberculous infection increases with age.

Hamburger states that when infection occurs after the age of five, the tendency for healing is very marked: and in the course of a few years, in the absence of reinfections, the primary focus becomes inactive and a tuberculin reaction will no longer be possible. My experience does not accord with this statement; for I found that children whose infections dated back ten to twelve years or longer reacted positively more often than those more recently infected.

No text book fails to dwell on the all-important rôle which measles and whooping cough assume in predisposing to the development of tuberculous infection and disease in childhood. I cannot recall a single instance of undoubted tuberculosis following in the wake of either one of these affections. I am speaking of conditions as they obtain in Colorado. I was therefore the more curious to determine what causal relationship, if any, exists between these acute diseases and tuberculous infections as revealed by the outcome of the cutaneous test. Of the children with a positive von Pirquet, sixty-seven and one-tenth percent gave a history of measles, and of those with a negative reaction, sixty-four and three-tenths percent; thirty-seven and one-tenth percent of the positively reacting cases had whooping cough, and twenty-nine and six-tenths percent of those with a negative reaction. If measles and whooping cough were such formidable factors in the causation of tuberculous infection, the incidence of positive reactions in those with a history of these diseases should have been distinctly higher.

Of all the children in this series, only five

were found clinically tuberculous. Four showed apical involvement, and one, tuberculosis of the spine. Not one was under fourteen years of age, and none was born in Colorado; four were of tuberculous parentage; three reacted positively, but only one of these showed a strong reaction; of the two with negative reactions, one concerned a girl of seventeen and one-half years, markedly cachectic, with dorsal Pott's. All but the last made gratifyingly rapid and complete recoveries, having at no time evinced any serious impairment of health.

Eleven children displayed such manifestations as prolonged fever, persistent loss of weight, apathy, or intractable cough, which warranted a presumptive diagnosis of tuberculosis, probably of the tracheo-bronchial glands. Of these eleven children, four were Colorado-born, seven of tuberculous extraction, nine reacted positively with only one showing a marked reaction. One was under two years; two, between five and six; one was eight; four, between eleven and twelve; and three, between sixteen and seventeen years. Thus it is noted that the cutaneous reaction, while of milder degree, is more frequently encountered in the active and suspected cases than in the apparently healthy.

The climate of Colorado as shown by the foregoing figures exercises no striking influence in the prevention of tuberculous infection in children of tuberculous parentage. In the non-exposed, however, the frequency of infection is incomparably lower than what obtains elsewhere. Active tuberculosis is conspicuous by its infrequency and had not been encountered in the Colorado-born. This is all the more impressive when attention is directed to the fact that we are speaking of children sixty percent of whom are of tuberculous parentage, of the poor class, with evidence of malnutrition in the majority. When active tuberculosis supervenes, it is of exceeding mildness with a predilection to prompt and complete healing. Granted, that the pulmonary type of infection is not

the usual form assumed during childhood; the literature, however, is replete with reports of extensive pulmonary destruction even in the very young. In this series tuberculosis of the lungs had not been diagnosed nor had it been suspected in any child under fourteen. Fatalities amongst Colorado children ascribable to tuberculosis are so rare as to be negligible, only one death having occurred in four hundred and sixty-four children, and this in a girl seventeen and one-half years old. This unusual state of affairs is the more remarkable by reason of the undisputed frequency of tuberculosis as a cause of death in children. Hamburger finds that ninety-three percent of all the tuberculosis-infected under one year, and sixty-eight percent of all between one and four years, die. This series included eighty-five children under the age of four with twenty reacting positively, and not one betrayed even a suggestion of impaired health. It may be contended that this phenomenally low rate of mortality is accounted for by excluding from this study all acutely ill children. In reply to such allegation, I wish to say that my records for the past ten years show but seven deaths from tuberculous meningitis in children, many of whom had tuberculous parents; and this is the form tuberculosis most frequently assumes in early childhood. It is noteworthy that of these seven children not one was the offspring of a tuberculous parent, and two had grandparents with questionable tuberculosis. This experience harmonizes with the views of Solly, Turban and Webb, that the offspring of the tuberculous withstand this infection more successfully than those not with such antecedents. The infrequency of tuberculous infection in Colorado-born children, the tendency to localization and to rapid recovery in the event of activity, and the amazingly low death rate, all testify in no uncertain manner to the beneficent effects of the Colorado climate on the prevention and arrest of tuberculosis in childhood.

TABLE NO. 1.

Results of von Pirquet Test, According to Sex and Age.

Age	Males examined.....	Females examined.....	Total (male and female)	Male with positive reaction	Female with positive reaction	Total with positive reaction	% of positive reactions of all males..	% of positive reactions of all females	% of positive reactions of all examined	No. of males showing marked positive reactions.....	No. of females showing marked positive reactions.....	% of marked positive reactions	% of males with marked positive reactions	% of females with marked positive reactions
Under 6 mos...	5	4	9	0	0	0	0	0	0	0	0	0	0	0
1/2 to 1 yr....	4	4	8	1	1	2	25	25	25	0	1	50	...	...
1 to 2 yrs...	15	13	28	2	5	7	13.3	38.5	25	1	1	28.6	...	...
2 to 3 yrs...	9	9	18	1	3	4	11.1	33	22.2	0	1	25	...	...
3 to 4 yrs...	11	11	22	3	4	7	27.3	36.4	31.8	0	2	28.6	...	...
4 to 5 yrs...	19	17	36	11	4	15	57.9	23.5	41.7	3	1	26.7	...	...
5 to 6 yrs...	18	12	30	3	1	4	16.7	8.3	13.3	0	0	0	...	...
6 to 7 yrs...	18	18	36	10	3	13	55.5	16.7	36.1	2	1	23.1	...	...
7 to 8 yrs...	11	22	33	3	8	11	27.3	36.4	33	1	2	27.3	...	...
8 to 9 yrs...	13	24	37	3	9	12	23.1	37.5	32.4	0	2	16.7	...	...
9 to 10 yrs...	15	19	34	7	9	16	46.7	47.4	47	1	2	18.8	...	...
10 to 11 yrs...	16	10	26	6	4	10	37.5	40	38.5	1	2	30	...	...
11 to 12 yrs...	9	17	26	4	13	17	44.4	52.5	65.4	0	2	11.8	...	...
12 to 13 yrs...	10	9	19	7	6	13	70	66.7	68.4	1	1	15.4	...	...
13 to 14 yrs...	11	7	18	7	2	9	63.6	28.6	50	1	0	11.1	...	...
14 to 15 yrs...	5	19	24	5	8	13	100	42.1	54.2	2	2	30.8	...	...
15 to 16 yrs...	13	12	25	9	4	13	69.2	33.3	52	2	0	15.4	...	...
16 to 17 yrs...	9	12	21	2	8	10	22.2	66.7	47.6	0	0	0	...	...
17 to 18 yrs...	6	4	10	4	1	5	66.7	25	50	0	0	0	...	...
18 yrs.....	2	2	4	2	2	4	100	100	100	0	0	0	...	...
Totals ...	219	245	464	90	95	185	41.1	38.8	39.8	15	20	18.9	16.7	21.1

TABLE NO. 2.

Relationship Between Duration of Exposure and von Pirquet Reaction.

Time elapsed since exposure	No. with positive reaction	No. with negative reaction	Percent of positive reactions	Percent with marked positive reactions
Less than 1 year.....	4	9	30.8	75
1 to 2 years.....	5	12	29.4	0
2 to 4 years.....	27	26	50.9	14.8
4 to 6 years.....	13	32	28.9	7.7
6 to 8 years.....	26	22	54.2	4.6
8 to 10 years.....	27	9	75	7.4
10 to 12 years.....	15	7	68.2	0
12 to 14 years.....	6	1	16.7	85.7
14 to 16 years.....	5	5	50	0
16 to 18 years.....	1	1	50	0
18 to 19 years.....	2	0	100	0

TABLE NO. 3.

Relationship Between Enlarged Cervical Glands and von Pirquet Reaction.

Number showing enlarged glands.....	286
Percent of positive von Pirquet reactions in those with enlarged glands.....	37.4
Number without enlarged glands.....	78
Percent of positive von Pirquet reactions in those with enlarged glands.....	37.4

REACTING POSITIVELY				Normal development			Above normal development			REACTING NEGATIVELY		
Subnormal development		% of marked reaction	No. with marked re-action	No. with marked re-action	% of marked reaction	No. with marked re-action	% of marked reaction	No. with marked re-action	No. subnormal development	No. normal development	No. above normal development	
No.	No.											
8- 9 yrs.	10	..	....	2	1	....	..	..	....	15	6	0
9-10 yrs.	6	2	....	4	..	....	4	1	....	10	7	1
10-11 yrs.	7	..	....	..	..	....	2	1	....	14	0	2
11-12 yrs.	9	2	....	2	..	....	3	1	....	5	1	4
12-13 yrs.	7	..	....	..	..	....	1	1	....	3	2	1
13-14 yrs.	7	..	....	3	..	....	1	1	....	8	0	0
14-15 yrs.	8	1	....	1	1	....	4	1	....	5	4	2
15-16 yrs.	10	2	....	1	..	....	2	..	....	4	1	5
16-17 yrs.	4	..	....	3	..	....	3	..	....	4	1	2
17-18 yrs.	1	..	....	3	..	....	1	..	....	3	4	0
18 yrs....	1	..	....	2	..	....	1	..	....	1	0	1
Tot. Male.	51	..	....	16	..	....	16	..	....	62	42	18
Tot. Fem.	51	..	....	18	1	....	16	..	....	81	37	15
Total.	102	14	13.7	34	4	11.8	32	9	27.5	143	79	33

Positive reaction	underdeveloped	61.8%
	normal development	20%
	above normal development.....	19.5%
Negative reaction	underdeveloped	56.1%
	normal development.....	31%
	above normal development.....	12.6%

TABLE NO. 6.

Relationship Between Reactions in the Exposed (parents tuberculous) and in the Non-Exposed, as Well as in the Colorado-Born and Not Colorado-Born.

OF NON-TUBERCULOUS PARENTS (NOT EXPOSED).

BORN IN COLORADO						NOT BORN IN COLORADO				
Age	No. male	No. female	No. male positive.....	No. female positive....	% of positive.....	No. male	No. female	No. male positive....	No. female positive..	% of positive.....
Under 6 mos.....	4	1	0	0	0	..	..	..	..	..
1½ to 1 yr.....	2	2	0	0	0	..	..	..	..	..
1 to 2 yrs.....	4	6	1	1	20	..	..	..	..	..
2 to 3 yrs.....	7	2	0	0	0	0	2	0	0	0
3 to 4 yrs.....	6	3	0	1	11	0	0	0	0	0
4 to 5 yrs.....	7	5	2	0	16.7	0	1	0	0	0
5 to 6 yrs.....	8	5	2	0	15.5	0	0	0	0	0
6 to 7 yrs.....	5	7	2	0	16.7	0	1	0	0	0
7 to 8 yrs.....	5	8	2	0	15.5	1	1	0	0	0
8 to 9 yrs.....	3	7	1	1	20	0	3	0	1	33.3
9 to 10 yrs.....	3	3	1	1	33.3	2	1	1	0	33.3
10 to 11 yrs.....	8	1	2	0	22.2	1	2	1	0	33.3
11 to 12 yrs.....	1	4	1	1	40	0	1	0	1	100
12 to 13 yrs.....	0	2	0	1	50	1	0	1	0	100
13 to 14 yrs.....	3	1	2	0	50	2	3	0	1	20

OF NON-TUBERCULOUS PARENTS (NOT EXPOSED)

Age	BORN IN COLORADO					NOT BORN IN COLORADO				
	No. male	No. female	No. male positive...	No. female positive..	% of positive.....	No. male	No. female	No. male positive...	No. female positive..	% of positive.....
14 to 15 yrs.....	0	4	0	2	50	0	4	0	1	25
15 to 16 yrs.....	0	3	0	0	0	2	3	2	0	40
16 to 17 yrs.....	1	3	0	3	75	4	3	2	1	42.8
17 to 18 yrs.....	1	0	1	0	100	4	2	1	0	16.7
18 yrs.....	..	..	..	..	...	1	1	0	1	50
Totals	68	67	17	11	20.7	18	28	8	6	30.4
	135		25%		16.4%	46		44.4%		21.4%

OF TUBERCULOUS PARENTS (EXPOSED)

Age	BORN IN COLORADO					NOT BORN IN COLORADO				
	No. male	No. female	No. male positive...	No. female positive..	% of positive.....	No. male	No. female	No. male positive...	No. female positive..	% of positive.....
Under 6 mos.....	1	2	0	0	0	..	..	..	..	...
1/2 to 1 yr.....	5	2	1	1	28.6	..	..	..	..	...
1 to 2 yrs.....	10	7	1	4	29.4	1	0	0	0	0
2 to 3 yrs.....	2	5	1	3	57	..	..	..	..	...
3 to 4 yrs.....	4	4	3	2	62.5	1	4	0	1	20
4 to 5 yrs.....	12	8	9	3	60	2	3	1	1	40
5 to 6 yrs.....	6	1	1	0	14.3	4	5	0	1	11
6 to 7 yrs.....	7	4	4	2	54.5	4	7	1	2	27.3
7 to 8 yrs.....	3	6	1	5	66.7	2	5	1	2	43
8 to 9 yrs.....	3	3	1	2	50	5	12	1	6	41.2
9 to 10 yrs.....	2	3	0	3	60	7	10	5	4	53
10 to 11 yrs.....	1	2	0	0	0	6	5	3	4	58.3
11 to 12 yrs.....	2	4	1	3	66.7	6	6	2	6	66.7
12 to 13 yrs.....	0	1	0	1	100	8	5	6	10	77
13 to 14 yrs.....	2	1	2	1	100	4	2	3	0	50
14 to 15 yrs.....	1	4	1	1	40	4	5	4	4	88.8
15 to 16 yrs.....	1	3	0	2	50	10	4	7	2	64.3
16 to 17 yrs.....	1	2	0	2	67	0	3	0	3	100
17 to 18 yrs.....	..	..	..	..	...	3	2	2	1	60
18 yrs.....	1	0	1	0	100	1	2	1	1	66.7
Totals	64	62	27	35	49.2	68	80	37	48	57.4
	126		42.3%		56.4%	148		54.4%		60%

Born in Colorado.....	261
Positives in Colorado-born.....	34.5%
Not of tuberculous parents.....	181
Positives in those not of tuberculous parents.....	23.2%
Of tuberculous parents.....	274
Positives in those of tuberculous parents.....	53.6%
556 Metropolitan Building.	

DISCUSSION ON THE PAPERS OF DRs.
FRIEDMAN AND CATTERMOLLE.

Franklin P. Gengenbach, Denver: It is certainly a privilege, as well as a pleasure, to have heard these two papers. Dr. Cattermole has been interested in this subject for a number of years, and his statistics already have been quoted and recognized by men in other parts of the country who are working on this problem. I think it would help a great deal if we were to go to the trouble of trying some of these tests ourselves.

The thing we are trying to find out is just at what stage and in what way the child becomes infected. We are beginning to realize that the primary infection in a large percentage of cases occurs in childhood, and we want to know when and in what way. Does it come always from human contagion, or does it come sometimes from bovine contagion? We recognize that there is such a thing as bovine tuberculosis, and that human beings may become infected, but it probably plays a rather small rôle as compared with the human type. No matter what may be the source of infection, pediatricians realize more and more that it is a good idea to boil milk in order to destroy the pathogenic germs, and so on. We know that the average baby who is artificially fed does better on boiled cow's milk than on raw cow's milk.

There is so much that one might say on this subject that he hardly knows where to begin or where to leave off. It occurs to me that if the members of this society would make a practice of making von Pirquet tests on the children they bring into the world, say about every six months, we could gradually accumulate a wealth of material bearing on just about what age most children become infected, and then if we found, for instance, that most of them went beyond one or two stages, we could eliminate to a great extent the possibility of a bovine infection. In other words, they get rather beyond the milk stage, and by going at this carefully we could find out in what way they were infected.

I did not hear all of Dr. Friedman's paper, but there was one statement that he made which we see the importance of, and that is, climate in itself is no bar to contagion; in other words, no matter how good a climate we have, if a child or any individual is exposed to an active case of tuberculosis, he can readily acquire infection himself. This, of course, we all realize, and almost all these cases that do acquire tuberculosis are usually below par. That is the great fight in tuberculosis. If you can keep up the resistance against this infection, as in other infections, keep up the vitality of the individual to a certain point, he will practically become immune to infection, for it is only when resistance gets below par that he is very susceptible.

As regards treatment, climatic conditions are a large factor. The high dry altitude that we have here in Colorado and in other parts of the country is certainly beneficial in the pulmonie type. The sea level certainly has done wonders for some of these cases of glandular and osseous tuberculosis.

I was very much interested in some statements that were made by Major Armand de Lille in Chicago during the meeting of the American Medical Association, in which he gave a description of the organization and the development of a tuberculosis sanitarium in France. It was started in 1800 by a good hearted woman who seemed to have been a "natural born" nurse, and who was particularly interested in taking care of children. She asked and urged that tuberculous children be

sent to her to care for. She took these children and put them in a wheelbarrow and wheeled them down to the edge of the ocean, and while the sea air is beneficial, being out in the sunlight has been the most important factor there. From that small beginning she was able to get enough money to build a twenty-five bed hospital, and her work was recognized by the French government, and in 1861 they built a one hundred bed hospital, and the work progressed so rapidly and the effects were so beneficial, that in 1869 or in 1870 they built a six hundred bed hospital. That work has continued to develop until they now have a two thousand bed hospital, and with patients on the outside they are handling four thousand patients continually. He says the results have been very remarkable, and this splendid work has led to the development of a town, with employees and attendants, of ten thousand inhabitants. Of course, in America, that would not seem very large, but in a country like France it is of peculiar significance.

G. M. Blickensderfer, Denver: We have all listened with a great deal of interest and pleasure to these two papers, and we all realize that tuberculosis in children is far more common than the average one among us imagines. It is far more common in the homes of the well-to-do and the middle class people than we are led to suppose by most of the authors on tuberculosis in childhood. The recognition of the disease is perhaps more difficult on that account, because the average man practicing in families is not looking for tuberculosis, and the simple ailments of childhood are ascribed as the cause of their trouble rather than the more obscure one of tuberculosis, and that is largely because of the fact that the active signs of tuberculosis are rarely present in young children in the beginning; but in the presence of failure to gain in weight, some anemia, prolonged fever, and no other symptoms by which a positive diagnosis of some other condition can be made, tuberculosis should be considered and the cutaneous test made, and it will be found positive in very many cases where it is the least suspected.

O. M. Gilbert, Boulder: I think these papers open up one of the greatest problems we have in Colorado, and one which it is our duty to follow up. It is very important for us to know, if possible, when we get our infection, and how we get it. Whether it remains as a latent or becomes an active infection is of the greatest importance, and we are peculiarly situated to make these investigations and help to determine those points.

For a long time we in Colorado have had the impression that there is a greater degree of resistance to tuberculosis here than elsewhere. Dr. Jim Murphy of the Rockefeller Institute says that these general impressions need to be translated into statistical facts, and that is the problem. Dr. Friedman and Dr. Cattermole are doing that in so far as tubercular infection goes. Then the next step, as Dr. Friedman points out, is to determine how many of these children become actively and progressively tuberculous. It is astonishing how few cases of progressively active tuberculosis we see in Colorado. How many cases do we see of generalized miliary tuberculosis or of the meningeal form, considering the large amount of infection that our population is exposed to?

Measles and whooping cough are no longer supposed to prepare the soil and initiate infection but simply stir up an old infection. That is the only tenable attitude to take toward these things. You will doubtless recall the point Dr. Welch made at the National Association on Tuberculosis a few years ago, referring to the early infection of

childhood as a two-edged sword. Hamburger, of Vienna, made much the same remark. It is a thing we must regard not altogether as an unmixed evil, for possibly there is a beneficent element in this infection. If we were protected from slight childhood infections through a long period of time, when we were exposed to infection we would be all the more vulnerable. During this long slow process of infection we are accumulating immunity. Hamburger says we do not know when we may exceed the limit of beneficent stimulation or immunization and go over onto the other side and develop an increased vulnerability. With repeated attacks of infection children are likely to become all the more vulnerable. Just how this works out it is hard to tell. According to Clive Rivierre, if children could be fed definite doses of tubercle bacilli in milk they might get gradual immunity.

Our experience with cervical adenitis is an eye opener. It is seldom that we see a case here in Colorado that requires treatment. This fact must indicate some degree of increased immunity out here.

L. E. Rupert, Florence: As to the question of tuberculosis, I believe that a vaccine will be used in making a diagnosis of tuberculosis in children the same as we use the Wassermann test in suspected cases of syphilis. Why not immunize all children against tuberculosis like we do against smallpox? In those that react and we find to be tuberculous, we should follow up with the reaction until we get no reaction, and then we shall have cured those cases.

M. I. Marshak, Edgewater: I consider it a great privilege to have listened to the papers of Drs. Friedman and Cattermole, and the thing that strikes me particularly is this: they have done a tremendous amount of work in Colorado, and have done it under a handicap. When people are able to get together four hundred or eight hundred cases like these men have done out of private practice, it is different from work done in institutions where they have got thousands of cases running through their hands in a year. I have figures on the same type of study made in one year in Hudson County, New Jersey, with a population of five hundred thousand, mostly industrial in character. These statistics are striking. Von Pirquet tests were made on children with tuberculosis or in children exposed to infection. In the first place, out of five hundred eighteen children examined, twenty-two were found positive for tuberculosis, that is, they had the physical signs and other evidences of actual tuberculous disease, not of tuberculosis infection. Of von Pirquet tests, one hundred seven or twenty-four and five-tenths per cent were positive, and three hundred thirty were absolutely negative. Later, in a second test of eighty-four cases, ten were found positive. In a third test there were forty-eight negative cases and two positive.

A point of interest here is the number of rooms occupied by the different families in which these children lived. We find that out of five hundred eighteen children, sixteen of them lived with their families in two rooms, ninety-two in three rooms, two hundred thirty-eight in four rooms, eight hundred eleven in five rooms, and forty in six rooms. One hundred and eighteen children had fathers who were infected; one hundred eighty had mothers who were infected; thirteen had both mother and father infected; and twenty-two lived with boarders who were infected.

In these dispensaries they also took care of the children who were not from tuberculous families; they came there because they were not feeling well, and they were given the von Pirquet test like the

children of tuberculous families, and instead of a percentage of twenty-four and five-tenths positive we found twenty-nine and seven-tenths. The probable reason why there is an increase in the percentage is the fact that the children who came on account of symptoms were a little below par.

The textbooks, as Dr. Friedman pointed out, mentioned whooping cough as a factor in tuberculosis. We have always tried to find out the reason for this. I had the opportunity of having charge of the children's branch at this dispensary where we got these figures. I was never able to say that tuberculosis succeeded whooping cough. Subsequently to that time I did some work in connection with the Board of Health and was interested in a whooping cough clinic. We had an opportunity there of following up whooping cough cases. Approximately five hundred or six hundred cases were treated with whooping cough vaccines, and some were treated in the ordinary way, and these cases were followed up one or two years later, and the percentage of tuberculous cases following whooping cough was exceedingly small, so small that we could not bring forth the fact that whooping cough is a causative factor, or that tuberculosis follows whooping cough.

Dr. Gilbert's idea is the right one as far as whooping cough is concerned. We have got to figure it from the standpoint of infectious disease bringing out what has already been present.

J. F. McConnell, Colorado Springs: These papers are exceedingly interesting. There is however, one phase of the subject that I would like to bring before you. For the past ten years I have felt that the assumption which is generally made in regard to tuberculosis in children, that we have a primary tracheo-bronchial infection, is not the correct one. The work of Gohn, Kuss and a number of others disproves it. In seven hundred cases Gohn has shown the primary focus to be in the lungs. Tracheo-bronchial adenitis is secondary to the primary focus in the lung. He shows with a wealth of post-mortem material and with numerous roentgenograms seven hundred cases in which he was able to find the primary focus in the lung. He points out what I have seen myself corroborated at least twice, that in the tuberculous infection of children a fan-shaped tracheo-bronchial adenopathy is found. This involvement of the glands is the result of the primary focus in the lung. He does not say, nor do I say, that all cases have the primary lung focus. Undoubtedly, that is not the truth, but the preponderating number of infections in children come from a primary lung focus, and it has been very difficult in the past to find this focus. After three years' investigation he was able to hit on the original focus of infection. I think this is of extreme interest as bearing on prophylaxis, that we have here distinctly an aerogenous infection in these children with the primary focus in the lung, and secondary involvement of the tracheo-bronchial glands showing the fan-shaped adenopathy as it is generally termed.

In regard to what Dr. Cattermole said about the testing of school children to find out whether they react to tuberculosis, we frequently discover later on in life that they received their infection during childhood. I think there is no question about latent infection. All these cases are early infections, and it has been shown by rupture of the normal tolerance of the individual. The normal tolerance is ruptured, and an open or an active tuberculous involvement comes as a result of the rupture of this normal tolerance, which is the result of the sensitization of the patient by meeting tubercle bacilli early in life.

With reference to treatment, the results we have observed here in the high altitudes of New Mexico, Arizona and Colorado, and the effects of the ocean at Sea Breeze in Cotton Island, where the Marine Hospital has an excellent institution for glandular and osseous tuberculosis, have been excellent, as have all the results that have been reported from time to time from Switzerland. It is the open air life plus sunshine and all those things that go with climatic influences, rest and other things, in the treatment of these children, that bring about such excellent results. Plus that treatment, there is an added method and that is the use of tuberculin. I feel strongly that tuberculin is of inestimable value in the treatment of tuberculosis in children, although Fishberg in his book published two or three years ago says the psychic factor being absent in children, tuberculin is of no value. He dismisses the subject in these words that tuberculin is not valuable as a therapeutic factor in tuberculosis in children. In my own experience I have seen very excellent results from the use of tuberculin plus ordinary treatment. It is true, tuberculin acts best in the most favorable cases. Some physicians scoff at that idea. It is true of any treatment that we get the best results under the most favorable circumstances.

C. O. Giese, Colorado Springs: Several points of great importance have been brought out in these papers and in the discussions. There are several suggestions one might make in regard to the interpretation of the von Pirquet test. I have had the opportunity to see a number of von Pirquets made by the different men at different times in different places, and I feel the results would differ considerably, providing the same cases were tested. The old rule that was first laid down by von Pirquet is one that should be followed, and that is, the reaction should be both visible and palpable. You must not be satisfied with a visible reaction only; it must be a palpable reaction. You must feel elevation at the point of inoculation. It seems to me that if we are going to get practical results from some of the suggestions, we shall have to cooperate with confrères in other places. It is suggested that we examine school children in Colorado to find out when they are infected and whether they are infected. Speaking from my own experience, that has been bolstered up somewhat by the work of the examining boards, we are finding few cases of tuberculosis that develop in Colorado. I have not found tuberculosis among native Coloradoans or the ones that came to Colorado early. If we would settle this question, we would have to get cooperation of physicians in other states, and follow the children to see whether they develop frank pulmonary tuberculosis later on.

One point was mentioned which I do not quite understand. Some one said (I think it was the essayist) that infected animals could not be reinfected. That has been disproved. They cannot be reinfected ordinarily with the previous dose of tubercle bacilli, but they can be reinfected with a massive dose of tubercle bacilli, and not only can they be reinfected, but they die more quickly than animals not previously infected. It shows that the immunity by the previous infection is built up to a certain point, and if you overstep that a massive dose will kill the animal more quickly than if it had not been previously infected.

I cannot see how a perfectly closed case can infect the children of the household. I have noticed this, however, that in many cases practitioners do not distinguish between open and closed cases, and we see children in families where tu-

berculosis exists, but where the case is closed and is visited promiscuously by open cases; and that might be a suggestion as to how children in families where cases are closed are infected by others.

Dr. Friedman, (closing on his part): I am sure both of us are gratified at the discussion these papers have provoked. Many of the points brought out in the discussion are just as important as the points we attempted to emphasize in our papers.

Dr. Gengenbach touched upon the question of differentiation between bovine and human forms of tuberculosis. I think it is pretty generally conceded that it is next to impossible to differentiate the two forms of infection. There are certain cultural differences in the two forms of bacilli, but these are not reliable. Perhaps inoculation is the most reliable method to determine whether the infection is of bovine or human origin. The test is based on the fact that certain animals are extremely susceptible to infection with bovine bacilli, whereas they are extremely refractory to infection with human bacilli. I think it is agreed by those who have done work along these lines that ten percent of infections are attributable to the bovine bacillus.

Dr. Blickensderfer touched upon the fact that tuberculosis is far more common than is generally supposed. He is undoubtedly correct, but while we must think in every acute febrile case, especially if it is at all prolonged, of the possibility of tuberculous infection, we must not, however, err on the other side because tuberculosis does mimic very faithfully very many diseases that are of non-tuberculous nature, and which sometimes are of very long duration, weeks and even months. A positive von Pirquet in the presence of a febrile infection, especially in a young child, is of great significance. We can almost certainly diagnose such a case as being tuberculous in nature, because ordinarily the von Pirquet test is negative in febrile diseases, especially whooping cough, measles, influenza, broncho-pneumonia, and so on. When we get a low percentage of reactions in children, such as Dr. Marshak quoted, we should be exceedingly suspicious of the tuberculin we have been using.

In my work I have used three kinds of tuberculin. I use Cutter's, Mulford's and Parke Davis'. I find the Parke Davis tuberculin gives me results which appear reasonably correct. Cutter's tuberculin gives a low percentage of positives, and I very seldom encounter any marked reactions after its use; and Mulford's human tuberculin gives me the best results. I use the old tuberculin of Koch.

Owing to the limitation of time imposed on the reading of papers, I could not dwell upon the point of what technic was followed and the interpretation of the tests. I used the von Pirquet technic. I use a large needle, causing a superficial abrasion, and I apply on a sterile small glass rod a little tuberculin, using friction in applying it, and I always make a control test. I have tried in several instances to apply the tuberculin first and make my abrasion through the tuberculin, and I have found no difference in the results. It is important to remember not to be satisfied with a single negative test but to repeat the test. It is also well in his connection to call attention to the fact that a positive von Pirquet invariably means tuberculosis; it means that the particular individual who reacts in this manner has a tuberculous infection, but not necessarily tuberculous disease. The von Pirquet test is not as reliable as some of the other tuberculin tests. The intracutaneous test is more reliable than the cutaneous, and the subcutaneous test is the most reliable of all; but it

is not free from danger, nor applicable in febrile cases.

Dr. Cattermole, (closing): I am glad Dr. Giese corrected me on the question of reinfection. I referred to the old method of injecting a small number of tubercle-bacilli under the skin, which caused a typical local tuberculous lesion, and when subsequent injections of the same kind were made they healed promptly. The proposition is this: Primary infection seems to increase the animal's resistance to a certain amount of infection, and we believe that with a reasonable amount of infection in the bronchial glands the child develops resistance to further infection. Possibly he acquires resistance enough to overcome a massive infection which may come later.

As to the question of repeating the tests, Bass, of New York, has made an intensive study of a few cases in children, in which he used two skin tests, and if he got negative results he used three subcutaneous injections. I have not the statistics at hand but a very large number of these young children reacted after five tests. He simply sensitized the children who had any infection. All of these children who reacted finally to the five tests were infected, but he brings out the minutest possible infection by sensitizing the children by repeated inoculations. I think he repeats the tests every other day.

As to the ages of the children in the same family showing reaction; If a child has lived with tuberculous parents long he has probably been infected, while some of the younger children, if they have not come in contact with infected parents, may not show reaction.

In children suffering from measles and whooping cough the tuberculin reaction is absent. There is something in those diseases which renders them incapable of reacting, which destroys their immunity, and that may answer the question as to whether whooping cough or measles causes tuberculosis or not. It does not in my opinion. It simply lowers resistance so that a latent tuberculosis becomes more active. Adults are not subject to whooping cough and measles, but they are subject to pneumonia and influenza, and we find, in adults, tuberculosis becoming apparent after these diseases, while in children it is more apt to become apparent after the diseases of childhood, whooping cough and measles.

The studies of Gohn are very interesting and reliable. According to his careful observations, the infection was primary in the lung and infected the adjacent bronchial glands, but it is easier clinically to recognize enlarged bronchial glands by physical signs than to detect minute infection in the lung tissue, so that clinically we had better depend upon the enlarged glands. We do not know whether infection then extends from the primary focus which may become active in the pulmonary tissue, or whether it extends from infected glands.

Personally, I want to thank the members for the great interest they have taken in this subject.

News Notes

Dr. M. R. Fox of Sterling left for Boston in the early part of September in order to spend a year in post graduate work at Harvard.

The death of Dr. Chas. P. Burns of Denver occurred at his home September 12, following several years' illness. Dr. Burns was an ex-president of what is now the Medical Society of the City and County of Denver.

Dr. Leon Block has removed from Pueblo to Denver, and announces opening of his offices in suite 404 Central Savings Bank Building, practice limited to diseases of the eye, ear, nose and throat.

Dr. Chas. A. Powers of Denver returned home in the latter part of September to remain permanently. According to press reports Dr. Powers has announced his retirement from active practice.

A Colorado Women's Hospital Association has been organized and incorporated for the establishment of an institution for the care of women suffering with venereal diseases. Mrs. Fannie M. D. Galloway is chairman of the board of directors and Mrs. May T. Bigelow is secretary. The doctors on the board of directors are Dr. Minnie C. T. Love and Dr. A. S. Taussig. When the exact plans of this organization are completed we hope to publish more about it.

Dr. B. A. Filmer, whose graphic description of the Argonne forest battles appeared in Colorado Medicine several months ago, has returned to Colorado Springs, an honorably discharged major, and expects to open an office there for the practice of ophthalmology.

Dr. R. W. Corwin of Pueblo has returned home from overseas, where he was engaged in research work for the Rockefeller Institute in England, France, Belgium and Germany.

Dr. L. M. Van Meter of Denver has received an honorable discharge from army service and returned home. Dr. Van Meter held the rank of major.

The annual meeting of railway surgeons will occur in Chicago October 15, 16 and 17. The meeting of railway chief surgeons is to be held on the day preceding.

The doctors of Fort Morgan are lending their support to a movement of the community for the building of a local hospital which will meet the demands of the county and vicinity.

Dr. Aubert Durnell has received his honorable discharge from the army and returned to Walsenburg, where he has opened an office.

During the progress of the State Medical Society banquet at the Brown Palace Hotel another delightful affair was being pulled off in the same building—none other than the marriage of Dr. William M. Bane of Denver to Miss Elizabeth Evans. The absence of both Dr. Bane and Dr. William C. Bane, his father, from the banquet was probably excusable under the circumstances.

Dr. Samuel Goldhammer was discharged from army service at Fort Sam Houston October 1st and has returned to Denver, where he will resume his duties as police surgeon and also open an office in a downtown building.

Taking advantage of the opportunity afforded by the state meeting, Jefferson graduates got together at an enjoyable luncheon.

Dr. L. E. Lemen of Denver, after forty years of service as physician and surgeon for the Union Pacific Railroad, retired from that service September 1st, and was succeeded by Dr. Hugh L. Taylor. Dr. Lemen has not relinquished his private practice.

We trust this breezy notice, which arrived in the editor's mail, is a reflection of the spirit of the Prowers County society as a whole:

"Doctor:

"Prowers County Medical Society will meet with Dr. Knuckey, October 4, 1919, at 2 p. m. Election of officers. Try to be on time—be minute men. Bring a clinic or one therapeutic fact.

"Change of date is on account of State Medical Society, October 7, 8 and 9—three days' refresh-

ments mentally; Monday, special refreshments physically. Cut out worry and work and take in both.

"Fraternally yours,

"F. MILTON FRIEND, M.D.,
Secretary-Treasurer.

"Lamar, Colorado, 9-23-'19."

Otero County News.

Dr. A. S. Brunk of La Junta is touring the East. He left September 1, via the auto route, will visit in Michigan and New York, and hunt in Maine. He will be absent three months. Dr. Curley, Chicago, is in charge of his practice.

Dr. R. F. Pollock of Rocky Ford is still on the sick list, though much improved. He has been out of his office for the past three months, part of which time he spent at the Mayo clinic.

Dr. W. M. Moon of La Junta, for the past fifteen years in practice there, has removed to Orlando, Fla., where he will practice in eye, ear, nose and throat work exclusively. He is succeeded by Dr. A. L. Hargreaves of Chicago, who comes more recently from France, where he was in charge of a base hospital with the rank of lieutenant-colonel.

Dr. Hall of La Junta, Dr. B. B. Blotz of Rocky Ford, Dr. Miller of Swink, Dr. Broemser of Holly and Drs. Knuckey and Likes of Lamar have recently returned to their old locations after service with the army.

Dr. E. M. Sherman of Holly is enjoying an extended vacation in California.

Dr. A. S. Montgomery, formerly of Oklahoma, has located in the new town of Timpas, in the eastern end of Las Animas County.

Physicians of La Junta have advanced fees fifty percent, effective October 1st, on the minor items, making office calls \$1.50; city calls, \$3 (from 8 p. m. to 7 a. m., \$4); mileage, 50 cents per mile, counted both ways, plus the city charge; obstetrics, \$35; minimum fee for appendicitis, hernia and like conditions, \$150; assistants and anasthetists extra; no members of the local profession will examine for fraternal orders for less than \$3, and if the order does not allow that amount, it must be made good by the applicant or the local lodge. The present fee bill has been in force for twenty-two years.

The physicians of La Junta have organized a local society, with Dr. H. E. Hall as president, and Dr. R. L. Johnston as secretary. This was found necessary owing to the impossibility of arranging a fee bill which the physicians of Rocky Ford and the smaller towns would agree to adopt in common with La Junta. Fees in Rocky Ford, especially mileage, have always been notoriously low.

Dr. Ralph Mendelsohn, a La Junta boy born and bred, more recently of Des Moines, Iowa, left August 6th for Siam, where he will be chief sanitary officer for the kingdom at a salary of ten thousand dollars per year. Dr. Mendelsohn, though only twenty-eight years of age, has served his two years with the Rockefeller Sanitary Commission in Serbia, and afterwards two years as assistant sanitary officer in Siam, from which position he was called as a member of the medical reserve corps to the active service of his own country. The armistice was signed within a few weeks following his assignment to duty, after he had spent three months in continuous travel to reach this country from Siam. Dr. Mendelsohn has written several articles on tropical diseases, dealing more particularly with their prevention.

Medical Societies

CITY AND COUNTY OF DENVER.

The regular meeting of the **Medical Society of the City and County of Denver** was held September 2, 1919. Neither President Jackson nor Vice President Libby was able to be present, so Dr. Arndt presided.

The program opened with an address by Dr. Henry Sewall upon Blood Pressure and Sudden Death. He said of all animal functions arterial blood pressure is the most important. Arterial blood pressure is the immediate cause of death while the heart is the remote cause. Living tissue can be kept alive by flowing blood. High blood pressure causes over nutrition of the tissues of the body and is usually not the most important element in sudden death unless it is accompanied by weak arteries. The heart usually does not suffer, as there is an over nutrition of the tissues of the heart, causing hypertrophy along with the dilatation. In the case of low blood pressure there is not enough power to give proper blood supply to the tissues, causing malnutrition. In abnormally low pressure the coronary vessels are not filled and the heart suffers from malnutrition. The diastolic pressure as a result may fall below the level of the blood supply required for nutrition. Cases of lower diastolic pressure die suddenly, but rarely die in bed. Posture is of great importance. These cases may also die from coronary thrombosis. Dr. Sewall said sudden death often depends upon the physiology of the nutrition of the heart. Aortic regurgitation often causes sudden death, and angina pectoris robs the heart of its blood and is responsible for some sudden deaths. Dr. Sewall spoke of the pulse pressure being the measure of the ventricle pump. A large pulse pressure would cause a large amount of blood and nutrition to the tissues. On the other hand, a small pulse pressure indicates low blood pressure, and when the individual stands up the brain does not get sufficient blood. The speaker recommends in these cases an abdominal binder to strengthen the abdominal wall and enable the splanchnic system to empty itself of blood. He also recommends digitalis in these cases. It is a perfectly normal heart, but the blood pressure is low.

Dr. R. W. Arndt, in discussion, said that the ordinary reading of blood pressure was not of great aid unless it showed a very high or very low pressure. He also spoke of the fact that many do not die from high blood pressure, while those of a moderate blood pressure have died suddenly. He spoke for more use of the ophthalmoscope, as much information can be obtained from its use. The discussion was continued by Dr. P. J. Pothuisje, who spoke of cerebral thrombosis being a cause of death, as well as hemorrhage.

MARY R. STRATTON,
Reporter.

The **Medical Society of the City and County of Denver** met Tuesday evening, September 16, 1919. President Jackson was in the chair.

Dr. G. M. Blickensderfer presented, by the courtesy of Dr. J. W. Purcell, a boy twelve years of age who was a true hemophiliac. His mother was from a family of bleeders. He began to show the symptoms when two years old and has had ecchymotic spots on his body most of the time since. At the present time he has a large hematoma on his arm, the result of a boy grasping his

arm in a slight tussle. He has hemoglobin seventy-five percent, three million red blood cells, seven thousand five hundred white blood cells and seven thousand blood platelets. The coagulation time was taken by several men at different times. There was such a variation that the information obtained was not of much value except that it was found that the coagulation time was much above normal. The boy had enlarged knee joints which were somewhat ankylosed. He also had bad tonsils. Dr. Blickensderfer said eighty-five percent of these bleeders do not arrive at puberty. True hemophilia is known by the family history and the mode of transmission. The males are the bleeders and the females transmit the disease. The only disease with which it could be confused would be purpura. For treatment many things have been used, as thyroid, lactate of calcium, thromboplastin, transfusion, etc. Dr. Philip Hillkowitz in opening the discussion said the atmospheric conditions, temperature, condition of the air, different kinds of instruments and modes all contributed towards the variation in the result of the coagulation tests.

Dr. Lewis I. Miller next exhibited a patient with complete epispadias. The patient has an exstrophy of the bladder as large as a hen's egg and a lack of the symphysis pubis with a malformation of the rectum. The mother has a history in regard to other pregnancies which might indicate syphilis, but there is no syphilis in connection with this case as far as is known. The man has a peculiar gait due to the lack of the symphysis pubis. Dr. F. B. Stephenson also showed x-ray plates of the case. Dr. Miller then read a paper in which he gave a very complete review of the literature upon the subject of epispadias and hypospadias. He traced the formation of the parts in fetal life and explained the theory of the cause of the malformation. He then spoke of the different operations which have been undertaken and devised to rid the patient of the incontinence. Dr. O. S. Fowler opened the discussion, giving as his belief that the only relief is an operation in which a nipple-like formation is made to which some kind of a urinal can be attached to hold the urine. Dr. F. B. Stephenson spoke of the want of sacro-iliac pain in this case, although he has no symphysis pubis and mentioned another case in which the x-ray showed destruction of the symphysis by disease, and yet the patient, a heavy woman, had no sacro-iliac pain on standing or walking. Dr. William Spitzer said many times exstrophy of the bladder is confused with epispadias. Dr. O. M. Shere thought one of the causes of failure in operating upon these cases was that there was no other provision for draining the urine except over the area of the new operation. Dr. C. A. Ferris asked if there was a near relationship in the parents of this man. He was given a negative answer.

Dr. John W. Amessee read a paper upon Observations on the Prevailing Type of Summer Diarrhea in Children. He said of the 500,000 babies which die every year, 150,000 die of diarrheal diseases. In Paris, although they have the lowest birth rate, they have the lowest death rate. This he attributes to their conservation of child life through their milk stations. He spoke of the diarrheal complaints of this summer in the Denver Orphans' Home which were checked by boiling the milk five minutes. The prevailing diarrhea was of a rebellious character accompanied with tenesmus and blood, also with yeast cells in the stools. In many cases he had to resort to opium before he could check it. He gave the history of four cases to illustrate the character of the trou-

ble. Most of the cases had been fed on raw milk. Some have thought it a summer influenza or infection following the winter infections, but Dr. Amessee thought it came from the milk supply mostly. The causes which contributed to it this year were: the unusual intense heat for Colorado, the low water supply, dust and lack of ice, along with infected milk. He then took up the question of the need of a milk commission in Denver. We should have a certified milk with the society's approval set upon it. The discussion was very general and showed the interest of the society in the question. It was opened by Dr. Philip Hillkowitz, who was followed by Drs. C. G. Hickey, C. T. Burnett, C. D. Spivak, A. S. Taussig, William N. Beggs, Theresa S. Fantz, G. M. Blickensderfer, Harmon Tremaine, F. P. Gengenbach and Emanuel Friedman.

MARY R. STRATTON,

Reporter.

WELD COUNTY.

At the June meeting of the **Weld County Medical Society** it was decided to meet once a month in a social way at the homes of various members of the society.

Dr. Madler reported a functional stricture of the esophagus in a man of twenty-five. X-ray showed a stricture two inches long, with a dilatation above the stricture three inches long. Wassermann positive. Cleared up after five doses of salvarsan.

Dr. Spaulding reported a case of epidemic cerebrospinal meningitis. Spinal puncture showed a pure culture of meningococcus. Recovery followed administration of 100cc. meningococcus serum.

Dr. Knowles reported a case of "irritable heart of the soldier".

Dr. Ringle reported the case of a patient who was struck on the cornea by the copper filament in a whipcracker, with perforation of the cornea and iris and foreign matter in the lens, which was cataractous. Eye highly inflamed, probably due to copper salts.

Meeting adjourned for refreshments.

W. F. SPAULDING, Secretary.

On June 19, 1919, the **Weld County Medical Society** met in social session at the home of Dr. Spaulding.

After reviewing some clinical cases from the Massachusetts General Hospital, diagnoses being voted by secret ballot, Major Broman entertained those present with piano and vocal music. The members present voted to continue the social evenings, and, after refreshments, adjourned to meet next time at the home of Dr. Knowles.

W. F. SPAULDING, Secretary.

A social and business meeting of the **Weld County Medical Society** was held at the home of Dr. Knowles, August 4, 1919. Subject of the meeting was the question of enlargement of the Greeley hospital.

Dr. Knowles presented plans and specifications for an addition to the hospital making an increase of from a forty to a one-hundred-bed institution. He stated that on recommendation of the society, with the indorsement of the Commercial Club and other organizations, the county commissioners would undoubtedly favor the plans for hospital extension.

Dr. Fezer made the motion that the society indorse the plan for hospital extension and that a committee of three be appointed by the chair to confer with the Commercial Club and other organizations, Dr. Knowles to be chairman of the

committee. Carried. It was moved that the executive committee prepare resolutions on the deaths of Dr. G. R. Pogue and Mrs. J. K. Miller. Carried.

Mrs. Knowles then served delicious refreshments while the members present enjoyed the exhibit brought by Dr. Knowles from France.

W. F. SPAULDING, Secretary.

Book Reviews

The Health Officer. By Frank Overton, M.D., D.P.H., Sanitary Supervisor, N. Y. State Department of Health, and Willard J. Denno, M.D., D.P.H., Medical Director of the Standard Oil Company. Octavo of 512 pages, with 51 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, \$4.50 net.

Most comprehensive in its scope, from pre-natal care to life extension, this book embraces nearly all that the average health officer is likely to need in his work.

There are good blanks for the reports of health officers, but a blank for the investigation of typhoid fever would be an addition of value.

The excellent discussion on procedure fills a long-felt want of the writer, who is often at a loss to decide just what the best plan of procedure may be.

No method is given for "delousing" for the prevention of the spread of typhus fever. This is more than an academic question in Colorado, where there is a constant danger of infection from our belligerent neighbor on the south. There have been a number of cases of typhus in the state, especially in the southern part, and the Santa Fé Railway has evolved an efficient delouser for the use of its Mexican laborers.

But scant mention is made of the numerous types of privies and septic tanks for the sewage disposal in rural districts. Not even the famous "Kentucky Sanitary Privy" seems to be known as far east as New York. The State Board of Health of North Carolina has evolved a number of different types of privies for various conditions, to which I would respectfully call the attention of the authors.

The chapter on heating takes up none of the modern methods of warming houses, schools, etc., such as steam and hot water, direct or indirect.

No reference is made to recent court decisions relative to the power of boards of health to enforce vaccination or exclude from school all unvaccinated children during the prevalence of smallpox.

Fumigation, except for rats or vermin, gets but little notice, which is perhaps just as well, as thorough cleansing has largely taken its place.

Swimming pools are ignored.

The terms "isolation" and "quarantine" are used interchangeably. The U. S. Public Health Service makes a distinction.

Barring the few suggestions made above, the book is a most comprehensive and valuable one, and I shall take occasion to consult it daily.

J. W. M.

The Surgical Clinics of Chicago. Volume III, Number 3, June, 1919. Published Bi-Monthly by W. B. Saunders Company. Philadelphia and London. Price, per year, \$10.00.

There are nineteen clinics besides one historical contribution in the June number. Most of the clinics are very good, giving a careful description of the case and its operative treatment. The first article, by Dr. Roy L. Moody, deals with

skull lesions and methods of trephining in prehistoric times. Photographs of skulls operated even as long ago as the neolithic age are shown, and probable craniotomy methods of different peoples from the ancient Egyptians to the Pre-Columbian Peruvians are described.

The clinic of Dr. Arthur Dean Bevan contains seven cases ranging from gastrotomy in an infant to a simple pilo-nidal cyst. The cases are well demonstrated and in not too many words.

A clinic by Dr. Gatewood of the Presbyterian Hospital on duodenal ulcer is of particular value in that he spends a large part of his time on the postoperative dietetic treatment as practiced at that hospital by Dr. Sippy. He considers the success or failure of any gastric operation to be largely dependent on the care given to the diet and medication during and after convalescence.

Dr. B. F. Davis and Dr. W. E. O'Neill each have a case demonstrating unusual conditions at the umbilicus. They take up in their differential diagnosis the various affections which may take place at the umbilicus or an adherent fetal remnant.

The treatment by Dr. Thomas J. Watkins of infected and suppurating wounds of the abdominal wall is not the ordinary one pursued. He obtains uniformly good results without re-opening his wound or removing sutures.

Two cases of plastic repair of the heel presented by Dr. B. F. Lounsbury show no new method, but the repair is well explained and well illustrated. Among the other clinics may be mentioned three cases each by Dr. Carl Beck and Dr. A. J. Ochsenr.

G. B. P., Jr.

Pulmonary Tuberculosis: By Maurice Fishberg, M.D., Clinical Professor of Medicine, New York University and Bellevue Hospital Medical College. Second edition, revised and enlarged. Pp. 744, illustrated with 100 engravings and 25 plates. Philadelphia and New York: Lea & Febiger, 1919. Price, \$6.50.

This second edition of Fishberg's book on pulmonary tuberculosis, like the first, shows it to be the work of a clinician of large experience who has kept well abreast with current literature. Revision has been thorough and new chapters have been added on tuberculosis of the pleura and on pneumothorax. The author is careful to distinguish between tuberculosis and phthisis and consistently carries the distinction through in the discussion on the pathology, symptomatology and treatment of pulmonary tuberculosis.

It must be confessed that the chapter on Pathology and Morbid Anatomy is rather confusing and one should like to read something on the pathology of genito-urinary tuberculosis in the section on Tuberculosis in Other Organs. It would seem that the frequency of genito-urinary complications in the course of advanced phthisis would be sufficient justification for at least a brief description of its pathology and clinical relationship to phthisis.

The radiographic illustrations are quite complete and surprisingly clear in spite of considerable reduction in size. Since radiographic shadows are described as light areas it might be less confusing to the tyro in skiagraphy if the illustrations were published as negatives.

The author discusses his subject in well-defined clinical groups—incipient and advanced stages of chronic phthisis, fibroid phthisis, abortive phthisis, acute phthisis, abortive tuberculosis, pulmonary tuberculosis in children and phthisis in the aged. The description is excellent and true to clinical experience.

In the chapter on Treatment, the author describes the tendency toward therapeutic nihilism in pulmonary tuberculosis. Medication is important, if only for the psychic effect on the patient and in order to keep up his confidence and trust in the physician. Therapeutic drugs and indications are therefore described in detail, both in the general handling of the patient and the treatment of complications. Artificial pneumothorax is a proven valuable aid in the surgical treatment of certain types of pulmonary tuberculosis. Even in desperate cases it may prolong life and secure comfort for long periods of time. The technique of the operation, as well as the subsequent management, is described in detail.

W. S. D.

A Text-Book of Urology in Men, Women and Children, including Urinary and Sexual Infections, Urethroscopy and Cystoscopy, by Victor Cox Pedersen, A.M., M.D., F.A.C.S.; Major, Medical Corps, United States Army; Visiting Urologist to St. Mark's Hospital; Member of the American Urological Association, New York Academy of Medicine, American Electrotherapeutic Association, Committee of Venereal Diseases of Advisory Council of the Department of Health of New York City; etc., etc. Illustrated with 362 Engravings of which 152 are original and 13 colored plates. Published by Lea & Febiger, Philadelphia and New York, 1919. Price, \$7.00.

Dr. Pedersen has made a distinctly valuable contribution to the rapidly increasing literature on urology. The press work is above reproach, the illustrations numerous and interesting. Naturally gonorrhea occupies the major portion of the work and every phase of the disease is carefully and exhaustively discussed. The chapters devoted to gonorrhea in women and children are particularly helpful. The differential diagnosis between different infections of the tubes, ovaries and the uterus; the complications, sequelae and prognosis of the disease in both men and women, are most thoroughly gone into. The details of treatment both local and general will appeal to the busy doctor especially if he is located away from the big centers. Emphasis is placed everywhere on the seriousness of gonorrheal infection in men and women and the need for early and thorough treatment. Dr. Pedersen says in his preface that "This book represents the experience of many years in urological departments in New York City, in private practice and in the author's clinic at St. Mark's Hospital. The actual production of the manuscript and illustrations required four years of consistent and concentrated effort." All that it is possible to do to bring a work of this kind down to the latest methods of treatment has been done. The laboratory furnishes ready and reliable means for diagnosis but it cannot furnish the experience and judgment necessary for the safe conduct of both old and new cases of gonorrhea. We must rely upon the testimony of others to a great extent and Dr. Pedersen, in giving the results of his careful investigations, is aiding us in a small degree to limit the ravages of this well nigh universal disease.

M. C. T. L.

NEW AND NON-OFFICIAL REMEDIES.

During September the following articles were accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with new and nonofficial remedies:

Abbott Laboratories: Cinchophen-Abbott; Chlorazene Surgical Gauze.

Gilliland Laboratories: Typhoid Paratyphoid Bacterial Vaccine (Immunizing) (Gilliland).

Morgenstern and Co.: Cinchophen-Morgenstern.
Van Dyk & Co.: Benzyl Alcohol (Van Dyk).

Government Wants Workers in Venereal Disease Campaign.

The recently created Interdepartmental Social Hygiene Board of the United States Government is in need of a number of specially trained men and women to complete its organization. The United States Civil Service Commission has announced examinations for the following positions: Chief of division for scientific research, \$3,500 to \$4,500 a year; chief of division for educational research and development, \$3,500 to \$4,500 a year; educational assistant, \$2,800 to \$3,600 a year; chief of division of relations with states, \$3,500 to \$4,500 a year; chief of division of records, information and planning, \$3,500 to \$4,500 a year; supervising assistant and inspector, \$2,800 to \$3,600 a year; field agent, \$1,800 to \$3,000 a year. All positions are open to both men and women.

Applicants for these positions will not be given scholastic tests in an examination room, but will be rated upon their education, experience and writings. Published writings of which the applicant is the author will be submitted with the application. For most of the positions a thesis on one of a number of given subjects will be accepted in lieu of published writings. The receipt of applications will close November 4th. Detailed information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board at the postoffice or customhouse in any of 3,000 cities.

THE COLORADO STATE MEDICAL SOCIETY.

(Incorporated November 1, 1888.)

The next meeting will be held in Glenwood Springs, September 7, 8, 9, 1920.

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Secretary, Crum Epler, Pueblo.

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COMMITTEES.

(Appointments to be published later.)



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Colorado Medicine

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Editorial Comment

THE CONSERVATION OF RADIUM.

It may be that the scientist of the future will regard the discovery of radium by Madame Curie in 1898 as the most momentous event in the history of mankind. Around no other property of matter, perhaps, has the imagination of the inquirer after truth woven such exalted dreams as have been created by the study of radioactivity.

The knowledge obtained concerning the dissipation of energy which occurs during the disintegration of radioactive elements already constitutes a fairyland of science. The story, of course, is only begun. But already we are told, for example, that every hour radium generates sufficient heat to raise its own weight of water from freezing to boiling point; that uranium, of which radium itself is a transitional product, has a half-life period of many million years, radium coming next with a half-life period of 1,760 years; and that the ultimate disintegration product of uranium and radium is lead with a specific gravity of 206, and that of thorium is lead with a specific gravity of 208, whereas the specific gravity of ordinary lead, with absolutely the same chemical reactions, is 207. Although no evidence has yet been obtained of the possibility of transmutation of the elements by man, yet the indication from the facts of radioactivity that some such process does actually go on in nature has revived the visions of the alchemist toward this end. In 1903 Ramsay and Soddy discovered that radium continuously produces helium, the noninflammable gas which forms a part of our atmosphere

and which the government of the United States is now prepared to employ in military balloons.

After the discovery of radium it was not long before institutions for its therapeutic application were established in the principal capitals of Europe. In this country, several prominent surgeons early displayed a keen interest in the possibilities of the new wonder, and it was upon the basis of their financial support that the United States government conducted a special research department in Colorado. In Bulletin No. 70 of the U. S. Bureau of Mines, "A Preliminary Report on Uranium, Radium and Vanadium," by Richard B. Moore and Karl L. Kithil, 1913, the following statement was made:

The United States possesses unique deposits in these carnotite ores. They constitute at present the largest known supply of radium-bearing minerals in the world. . . . Up to the present, very little interest has been shown by Americans in these deposits, which may not be duplicated in so far as quantity goes in any part of the world.

Since 1913 radium has been commercially produced in the United States by the Standard Chemical Company of Pittsburg, Pennsylvania, in amounts of radium element varying from 1.7 to 13.6 grams or a total of 39 grams in the six years. It is estimated that the total radium production in the United States to 1919 approximates 55 grams of radium element, probably representing more than half of all the radium produced in the world.

In spite of a tendency to exaggerated claims, especially on the part of those financially interested in health resorts and in mineral waters which are alleged to be radioactive, and notwithstanding the over-

enthusiasm which is almost inseparable from the exploitation of a scientific novelty, there can be no question that radium has special and enormous powers for usefulness in medicine and surgery, although their development is still more or less in the experimental stage. Particularly beneficial results have been reported in some skin diseases, in certain forms of epithelioma, especially those less suitable for the x-ray, in lymphoma and Hodgkin's disease, and in otherwise inaccessible ulcers and malignancies of various parts of the body. The extremely high cost of radium and the great risk involved in its being carried through the mails have greatly limited its therapeutic use. Fortunately, a method has been discovered by which radium emanation, a gas given off by radium and which may be used for medical purposes in exactly the same way as radium itself, can be condensed into very small tubes and sold at very moderate cost. This emanation loses one-half of its strength in slightly less than four days, and the rate of deterioration must be borne in mind in making use of the gas. In a paper presented before the American Institute of Mining Engineers at its 1918 meeting in Colorado Springs, Dr. Moore made the following statement:

In my judgment the carnotite fields will not produce more than 100 additional grams of radium element at the most—if that much. This would about double the world's present supply; but on account of the large use of radium in cancer treatment, such an amount, although large scientifically, would be small in proportion to the probable demands.

A bill providing for control by the United States government of sources of supply of radium was defeated several years ago, largely as a result of the opposition of the Standard Chemical Company of Pittsburg, and with the assistance of a Colorado senator whose support is invariably and indiscriminately given to the doctrine of states' rights. An expert employed by the Standard Chemical Company has recently disputed Dr. Moore's estimate, and claims that at least 500 grams of radium should be obtainable from the carnotite ore available in this country. However, another representative

of the company admitted a year or so ago before a committee of the United States Senate that, whereas the company had an undoubted supply of ore for future purposes of about 6,000 tons, they were using this ore at the rate of 600 tons for the production of one gram of radium.

The urgent needs of the war for luminous radium compound led to a greatly accelerated depletion of the world's radium resources. In his paper Dr. Moore points out that the physicians and surgeons of this country are not purchasing enough radium to make the industry a financial success, and that it is therefore natural that the manufacturers should take other means of creating a demand. This they do by promoting the use of radium for luminous watches, push buttons, and other trifles.

It seems eminently desirable that steps should be taken to restrict the use of radium to essential purposes. It should be remembered that when employed in this way the metal is relatively indestructible, since its half-life is not much under 2,000 years. For the common good, the United States government should assume control of the sources of radium supply, or at least of the finished product. If it is believed that the vested interest which has been allowed to develop in the private exploitation of this wonderful rare element ought to be recognized and adequately compensated, arrangements might be made by which, instead of itself assuming responsibility for mining and refining the carnotite ore, the government would undertake to purchase manufactured radium from the Standard Chemical Company or other private producers. It is time for the medical organizations of this country to promote a nation-wide movement to this end.

W. H. C.

MEDICAL FEES AND THE INCREASED COST OF LIVING.

In spite of its having been termed a "Medical Trust", the organization of trained physicians known as the American Medical Association, with its constituent state and county societies, has never had any of the characteristics of a trade monopoly, for it

welcomes to its ranks the most obscure practitioner, the limitations to admission resting fundamentally on ignorance or immorality alone. Neither can that organization be justly put in the category of a trade-union, for physicians notoriously fail to stand together in a demand for regulated fees or limited hours of work. On the contrary they have been and have wished to be independent in fixing their fees and no one of them has heretofore felt that he might dictate what another should charge. Many indeed are in a position to charge as much as they see fit, qualified only by that indeterminate phrase "within reason", so that whatever uniformity of fees exists applies for the most part to the average practitioner and is best instanced by the ordinary charges for "visits" and "office calls", which in individual localities do tend to reach a common level. This does not come about by any studied agreement, but is a result of independent judgment exercised over a period of time by many men whose collective opinions finally establish an average. As fee schedules ordinarily have not been arrived at through consultation, by the same token there will probably be no concerted movement on the part of physicians to ride the rising tide of prices with the big industries, lesser merchants, and trade-unions. Yet every doctor should realize that he must either suffer on account of the depreciated dollar, or discontinue charging the same old fee of fifteen years ago; and his choice of action is not easy, for he knows that if he raises his own fees independently of others, it will mean a loss of some business which will go to those of his fellows who do not take the step with him.

At a time like this, if ever, when clerks, stenographers, actors and policemen are unionizing, it appears that doctors would be supported by the principle of self-preservation if they got together over the council table and decided in an honorable and ethical manner upon a fair general advance in fees and agreed to maintain a given schedule. Yet even though the question of legality does not arise, it is probable that no such concerted action will be taken. While the argument for unionism is a strong one,

it must be remembered that from a certain viewpoint physicians are public servants; that night and day emergencies arise which must be met by them whether or no and that therefore even though they may have a theoretical right to refuse to serve, in reality adverse public opinion would redound to their discredit or even force them to abandon any organized stand, much as has occurred in the case of striking policemen, who occupy a position somewhat similar to the doctors' with respect to the public. Also, medical men shrink from encountering the cry of "commercial" and will no doubt put up with material loss because of this sensitiveness and by reason of aloofness from the so-called sordidness of "business" practices. Here and there, one will tentatively advance his fees; here and there, later, a few will follow his example; and in the course of time, the tendency of opinion will again be towards a level and higher general fees will be established; but in the mean time the "organized" public will have far outstripped the medical profession in securing increased compensation, and doctors will be no better off then at present.

DENTISTRY, MEDICINE AND A NEW RESEARCH JOURNAL.

It is only five years since the pioneer work of Hastings demonstrated the relationship between infected teeth and certain rheumatic conditions, and so strengthened belief in what is known as the focal infection theory that today a physical examination hardly can be considered complete which does not include a survey of the common seats of bacterial nests. Before that time, the dentist had gone his way somewhat independently of medical consultation, striving to save teeth for his patient by vigorous "antiseptic" treatment of dental abscesses, leaving dead teeth in place, and pegging crowns into old roots, always considering only local pathology and cosmetic effect. But the time has come when he must change front in his attitude towards diseased teeth and he is responding to this need in a creditable manner—creditably especially from the point of view of his professional honor, for the new stand requires that he advise ex-

traction, time and again, in cases in which formerly it would have been in order to treat and try to save a tooth, occasion thus being offered for repeated visits and repeated fees from a patient which in the case of extraction would be uncalled for; and additional loss is apt to be sustained through his patients' leaving him to consult a less scrupulously ethical dentist for the sort of conservative treatment they prefer. His compensation for these losses will come later when the "swing of the pendulum" has reached the public and his position with regard to his competitor is then reversed. In the meantime he must fall in line with the leaders in his profession, who have already adopted the new faith and are practicing and teaching its tenets.

Evidence of this great step forward on the part of dentists, and of the closer future relations between dentistry and medicine, is to be found in a new journal which will appeal alike to members of both professions. The *Journal of Dental Research*, which has now reached its third issue, announces on its first cover page that it is "A journal of stomatology; devoted to the advancement and dissemination of knowledge pertaining to the mouth and teeth, and to their relations to the body as a whole". A glance at the names of the editorial board of seventy which grace its cover page shows that physicians, dentists and research workers of no little renown have become closely allied in investigations along the lines of medical research. An article by E. C. Rosenow on "Studies on Elective Localization of Bacteria", and one by Henry A. Cotton on "The Relation of Oral Infection to Mental Diseases" at once brand the journal as being both medical and dental.

There is a strong suggestion in all this that the day is fast approaching when dentistry will no longer be a profession unto itself; that it will be brought into the fold of medicine and be practiced as a specialty. Are not the teeth, the jaws and the gingival structures as important pathologically as the tonsils, the nasal structures, or the eye, for example? Is the dentist not now required to use medical judgment rather than what may be called dental judgment, and

should he not have therefore the same foundation of medical education which others who specialize in the surgery of particular organs have? Such an eventuality seems to be forecast by the advent of the excellent journal mentioned.

Current Comment

(Under this heading the editor will welcome from any physician-member discussions upon topics and problems which concern the medical profession, reserving the right of censorship as regards timeliness, suitability and fairness of argument of the contribution. Unpleasant controversy will not be entertained.)

MEDICAL FEES.

Fire Clay Gulch, October 10, 1919.

To the Editor of *Colorado Medicine*:

As I am now safely returned to my own city, I feel impelled to write you a few lines regarding my recent visit to Denver. In many ways I was surprised. For instance, I found by careful inquiry among my friends that many of your physicians had not increased their charges since the panic of 1893; that for visits and office consultations they got as much, or as little, as they did in those ancient days, and no more. I found that the rate for surgical work had come more nearly to its proper place, and showed a full understanding and due appreciation of the scientific qualifications underlying it. Why this difference of attitude should exist I am at a loss to say. I know the physicians of your city and I know that they have every reason for thinking highly of themselves, and yet their charges do not show it. "As a doctor thinketh of himself so he chargeth" may not have been said by old Solomon, but he surely would have so written if his attention had been called to the matter.

While in your city I met a man known from one end to the other of America as a most able consultant and he said: "I would rather have ten consultations a day at ten dollars each than two at twenty-five each." So far as financial returns are concerned, the remark showed wisdom; so far as his estimate of the value of his services is concerned, it, in my opinion, hurt every intern-

ist in the country; for if the man who was called in because of his medical skill, wisdom and judgment undervalued his professional work, how could the smaller men do otherwise than follow his lead?

In Fire Clay Gulch, as the cost of living has climbed I have done my best to climb with it; and I do not see that a patient who used to pay me fifty cents for the chance to see me professionally in my office, and who now gives me four times as much, thinks any the less of me. And, as for visits, I try my durndest to show a proper respect for the skill I carry with me and use as the patients request it.

Hoping on my next visit to find things bettered in this matter of fees, I am

Your old friend,

JEREMIAH BLISSTER.

THAT "CLOUD LIKE A MAN'S HAND".

At the recent meeting of the State Medical Society a very eloquent member, speaking in opposition to the registration of doctors, took his text from the above quotation. With bated breath he described the possibilities of registration, and withal made a most eloquent appeal.

Upon investigation of the source of the text, I find that the cloud which the servant of Elijah saw after seven looks was the fore-runner of a rain that broke a three-year drought, and when the servant reported a cloud the size of a two-dollar bill, Elijah immediately ordered his chauffeur to put on the chains.

The Venereal Division of the State Board of Health right now needs an accurate list of the doctors in the state for the purpose of sending a copy of the new law to each one of them; the secretary of the State Board of Health needs the same in the effort to get ninety percent registration of births; the State Board of Health is getting up new regulations for the handling of infectious diseases and wants every doctor in the state to have a copy; how is he to get these things unless we know where he is located?

I have traveled over a large part of the state during the last six months and I find that the very best, up-to-date registration of

the doctors is from fifteen to thirty percent wrong. Doctors are kept in the directory that have been dead for years, and all the new ones are not in the directory.

There are many things that the administrative officers would like to know about doctors: (1) A doctor might like to give a short sketch of his life à la congressman; (2) age, nationality, sex, married, single, etc.; (3) school, specialty; (4) connections with schools, hospitals, health work, boards; (5) services in army, legislature, congress.

These are a few of the many items of interest. With a correct registration list on hand we could find the distribution in city and country—that is, where are the congested spots and the anemic.

Registration with a small fee would enable the Secretary of the Board of Medical Examiners to get rid of the fee-splitter, the abortionist, and the squatter who simply camps in the out-of-the-way places, sticks up his sign and goes to it. He may be a renegade from justice, a man who never saw a medical college, or one who has failed in his examinations. I have seen all kinds in active practice in this state.

The local men hesitate to prosecute, as they will be accused of trying to get rid of opposition. The district attorneys demand the facts and a complaint filed before they will prosecute.

Finally, brethren, let us take up a collection of two-dollar clouds and thus bring on a cleansing rain which will clear our ranks of the criminal doctor and clean the wheels of administrative machinery.

J. W. MORGAN, M.D.,

Medical Inspector,
State Board of Health.

NEW AND NONOFFICIAL REMEDIES.

During October the following articles were accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies:

Abbott Laboratories: Tablets Cinchophen-Abbott, 7½ grains.

Calco Chemical Co.: Albutannin-Calco; Acetanin-Calco.

Cereo Company: Soy Bean Gruel Flour.

Gilliland Laboratories: Antipneumococcic Serum Combined, Types I, II and III; Antistreptococcic Serum.

Hynson, Westcott & Dunning: Acriflavine (Boots); Proflavine (Boots).

Merck & Co.: Albutannin-Merck.

Takamine Laboratory, Inc.: Hirathiol.

Original Articles

IMMUNITY OF COLORADOANS TO PULMONARY TUBERCULOSIS*.

H. B. WHITNEY, M.D., Denver.

Recent statements in connection with a proposed bond issue, regarding the prevalence of pulmonary tuberculosis among native Coloradoans and those who have lived here in health for many years, have been a rude shock to some of us who have always believed and claimed that residents of this state are relatively immune to this disease. The statement has been widely made that in the City of Denver alone there are today no less than a thousand cases of phthisis contracted in Colorado by previously healthy individuals. Whether or not this be a well substantiated fact, it is quite evident that its publication abroad cannot be other than detrimental to a locality which has always offered such great inducements to those seeking immunity and cure for consumption. We who live in Colorado desire to know and to teach only the truth. If no protection is afforded by our climatic and other accessory conditions to those threatened with and suffering from pulmonary tuberculosis, we surely all desire to come off the high horse we have ridden so long and take our proper place among the less favored regions of the earth. Moreover, the question has a most important bearing upon the relative insurability of Coloradoans, a matter in which the writer is much interested, and upon the importance to be attached by insurance companies to varying degrees of consanguinity with consumptives and of exposure to the tubercle bacillus among Colorado applicants.

It has always been the belief and contention of the writer that while meningeal tuberculosis, and possibly also tuberculosis of the glands and of other organs are perhaps no less frequent here than elsewhere, Coloradoans are very largely immune to pulmonary tuberculosis. That the disease may be contracted here is, of course, unquestionable; and in the following discussion no at-

tempt will be made to explain, by presuming a latent infection or by any other kind of subterfuge, those cases which really appear to have pursued here in Denver their usual and logical course. But it can, I think, be easily shown that the great majority of cases supposed to have developed here have been wrongly interpreted, and that the reputation which Colorado has acquired is more than sustained by statistical and other incontrovertible evidence.

Before presenting any figures, I wish to state briefly some of the reasons which have led me personally to form a profound conviction as to the relative immunity of Coloradoans.

In the first place, is it not astonishing how rarely one hears of the development of a case of phthisis among one's friends or acquaintances? During my whole residence in Denver I recall no such instance except the one or two cases which I treated as family physician. How many could say this after living thirty years in any large Eastern city?

Turning now to my records, I find that I have more or less extensive notes on about three hundred cases of phthisis seen in private practice, in addition to those observed in hospitals. While it is impossible for me to go through all these records, yet I do not hesitate to affirm that among them all there are not ten cases of indigenous phthisis. This infrequency seems all the more remarkable in my own case because my practice has been so largely general—a family practice; and I can recall at this moment but three such cases which have come into my care as family physician: one of these was a lady over seventy years of age, in whom I was quite confident that tuberculosis had supervened upon an old bronchitis of asthmatic character, and another had lived practically all his life with a tuberculous father who had been under my care for many years. And this latter statement introduces another factor which may well increase our astonishment at this extraordinary infrequency of pulmonary tuberculosis. When one considers the very large number of Coloradoans who have come here for this disease; their constant association in families,

*Read before the Medical Society of the City and County of Denver, October 21, 1919.

hotels, boarding houses and various employments with well people; the numerous opportunities for infection presented by a national health resort for the tuberculous, and the large relative proportion of Coloradoans with a tuberculous ancestry, one cannot but feel that were it not for some sort of immunity the incidence of tuberculosis among Coloradoans would be even greater than in other communities.

Another remarkable fact has impressed upon me the reality of this immunity. For twenty-five or more years I have made numerous life insurance examinations for a large number of companies; and for one of these alone, during the past ten years, these have amounted to some four hundred a year. Now, is it not remarkable that in not one of these four thousand examinations have I found an applicant with pulmonary tuberculosis contracted in Colorado? That they were all made with a considerable degree of care may be inferred from the fact that cases of phthisis were not at all infrequently found, but only among those who frankly admitted that they had come to Colorado for tuberculosis, or in individuals who, while denying any previous illness, were known to have lived in some other locality until within recent years. In at least thirty or forty such cases, although recovery was complete and the disease had been quiescent for several years, dryish râles after cough at one or the other apex still revealed the former infection.

It seems to me that one could not fail to be impressed by such observations as these, even were there no other proof to be obtained. I have, however, undertaken to review, by the aid of death certificates and personal inquiry among relatives and friends, every death in Denver from pulmonary tuberculosis said to have originated in Colorado during the period from July 1, 1917, to July 1, 1918. This particular twelve-month was selected for no other reason than that it was the latest available up to the appearance of influenza—a period to be avoided for manifest reasons.

Before proceeding to discuss these statistics, let us again carefully consider just what we may expect to learn from such a

study. In the first place, we do not at present wish to inquire to what extent miners, coal miners in particular, are protected in Colorado. Manifestly, miner's phthisis, so called, is not primarily tuberculosis, but an anthracosis, an occupational disease, upon which tuberculosis becomes subsequently engrafted. No climate could be expected to protect such individuals, though it may well be that the secondary infection is less common here than elsewhere. The same may be said of diabetes; pulmonary tuberculosis is a terminal development which is probably more or less independent of locality.

Again, when a person has resided for only a year in Colorado previously to the apparent onset of his tuberculosis, is it not fair to assume that he probably, to say the least, brought it with him? In other words, this inquiry is not for the purpose of ascertaining how many cases might be forced into the category of indigenous infections, but, by as fair an estimate as possible of the probabilities in each individual case, to learn how many cases presumably originated here. It must be universally admitted, and the statistics presented will sustain this contention, that even if all the deaths from pulmonary tuberculosis credited to a local origin are correctly interpreted, the mortality from this cause in Colorado is far below that of other regions, being probably about one-fourth. If, then, an individual dies of phthisis whose disease has admittedly lasted two years and who has been in Colorado but three, the chances that it was contracted elsewhere are at least four to one, and, as I hope to show, actually nearer fifteen to one. Many cases charged to Colorado were exactly such, while in others, properly, as it seems to me, excluded, the interval was two or three years, and in one or two even six. Certainly anyone who is familiar with the vagaries of pulmonary tuberculosis will readily admit that a person who dies of consumption after an illness said to be of two or three years' duration may very likely have been infected at a much earlier date.

Some cases, further, must of necessity be classified as of unknown origin; and probably it is in these especially that questions of prejudice or unfair assumption are likely

to be raised against the statistician, although they must of course be included on one side or the other of the balance sheet. Personally, I feel that when, for instance, a man dies of a hemorrhage from the mouth, and a diagnosis of tuberculosis is made by the coroner without autopsy, it is unfair to charge the case to Colorado simply because the man is said to have lived so-and-so many years in this state. Again, my study of the reported cases shows that three out of four of those charged to the state are wholly unfounded; it seems to me, therefore, that it would be more than fair to conclude that at least three out of four of these doubtful cases, in which data are either unobtainable or manifestly very unreliable, are based on an erroneous assumption, and should be excluded.

Now as to the actual statistical report of the year specified:

The total number of deaths in Denver from tuberculosis was 566, of which 520 were pulmonary. Of these, 87 are said to have been contracted in Colorado, or about fifteen per cent.

Of these 87:

13 were miners.

21 had been in Colorado but a short time, i. e.: 2, six years; 2, three years; 4, two years; 13, one year.

7 were coroner's cases.

4 died in the county hospital and details were unobtainable.

7 could not be traced at all.

15 cases are, it seems to me, to be excluded for various reasons which I shall briefly state in the following resumé:

Case 1, T. B., was reported to have come to Colorado fifteen years ago for some sort of bronchial trouble.

Case 2, T. G., came to Colorado for tuberculosis many years ago, recovered apparently, returned East, then came back to Colorado in a very serious condition, and soon died.

Case 3, N. S., was three and one-half years in the army outside of Colorado, discharged to a tuberculosis hospital, eventually returned home, where he died.

Case 4, G. E. B., died at the age of sixty-

seven. He had been twenty-two years in Colorado, but had come here for asthma and ill health, and had never fully recovered.

Case 5, A. B., had been in Colorado twenty-nine years and her husband states that she suffered during all these years from some genito-urinary trouble, and had no cough whatever until two or three weeks before her death.

Case 6, D. D., had been in Colorado half the time during the past four years, then he got "the grip" and died in six weeks at the age of forty-six.

Case 7, P. W., is reported to have been ill with "liver trouble" and with no cough to speak of, then had pneumonia and died in five days at the age of sixty-nine.

Case 8, C. K., died after an illness of eight years, and was reported to have come here from Nebraska fifteen years ago for tuberculosis.

Case 9, F. T., aged nineteen, went to Portland, Oregon, apparently well, came back in six months with tuberculosis, and died three weeks later. This was apparently a case of fulminant phthisis in a negro, and it seems much more reasonable to assume its origin in Oregon, in spite of his short residence there, than in Colorado. Had it been a chronic case, the justice of this assumption might be questioned. At the best, it must be admitted that the case is doubtful, and the court somewhat prejudiced.

Case 10, M. L., was six years in Oklahoma, then returned to Colorado with cough and emaciation, and died two years later of consumption.

Case 11, F. G., aged seventy-nine, was said by intimate friends to have sat around without fever and with a hearty appetite until a few days before his death, and to have had practically no cough nor expectoration.

Case 2, D. H., a barber, was said by a neighbor to have lived in and out of Colorado, and to have been ill three years. He was thought to have had consumption before coming to Colorado.

Case 13, B. A., had always been perfectly well until while cranking his machine he bursted a blood vessel and died instantly. His wife says he never had any cough, and

scorns the idea that a man so vigorous could have died of consumption.

Case 14, H. M.: A relative affirmed positively that she contracted her disease in Indiana in 1909, and came to Colorado on that account.

Case 15, P. M.: None of her family lived here then or now. She came from Oklahoma and rented the house where she died. The owner says that he always thought that she came here for her health.

Granting that in some of these fifteen cases doubt may still exist, yet it is evident that in no single one was a pulmonary tuberculosis surely contracted here, and that in the great majority it assuredly was not.

As an interesting comment on the dependence to be placed, in this connection, upon death certificates, I might report in full the deaths from pulmonary tuberculosis charged to Colorado in the month of July, 1917, six in all:

E. A., aged forty, in Colorado fourteen years, ill fourteen years.

G. B., aged twenty-five, coroner's case, ill four years, length of residence unknown.

H. K., aged thirty-two, ill one year, in Colorado one year.

A. R., aged forty-three, coroner's case, said to have been in Colorado twenty-two years, duration of illness unknown.

W. S., aged one month, ill one month.

C. S., aged twenty-five, in Colorado fourteen years, ill thirteen years.

Let us now return to our statistics. If we subtract from eighty-seven, the total number of cases charged by the health office to Colorado, the thirteen miners, the twenty-one who had lived but a short time in the state, and the fifteen whose histories have been given, we have left but thirty-eight cases as representing about the number which the most skeptical could claim to have been contracted by people in ordinary occupations in the State of Colorado during the year under consideration. Assuredly, however, if we could ascertain fully all the facts in the seven coroner's cases, in the four deceased at the county hospital, and in the seven which could not be traced, we would find that in a very large proportion the assumption of an indigenous origin

would also prove fallacious. If we subtract these eighteen cases from the total eighty-seven, it leaves sixty-nine, of which forty-nine, or practically three-fourths, have been shown to be unjustly charged to Colorado. Applying the same ratio to the eighteen coroner's, hospital and untraced cases, we are surely justified in assuming that only about five of these were probably genuine. The result of our investigation, then, is that during this particular year there died nineteen cases of phthisis which unquestionably originated in the state, and five more which probably originated here, a total of twenty-four. Even some of these nineteen present, if I may use the term, extenuating circumstances. For example, a negro boy who had pneumonia recovered partially, then lived a life of the utmost dissipation until he died six months later of what was said to be consumption. Another young man also had pneumonia, from which he never recovered, and died a year later. Six were over forty-six years of age, and four were over forty; and although the not infrequent occurrence of pulmonary tuberculosis in elderly people is now admitted, one cannot but feel some slight doubt as to the diagnosis in these cases. One of these I know personally to have been a bartender and a very hard drinker. Of the total nineteen, only eleven are noted as having lived in good or fairly good surroundings, and of these five were over fifty years of age. One might, therefore, say that during the year under consideration there were in Denver only five well authenticated deaths from pulmonary tuberculosis known to have been contracted in the state, among individuals under thirty-three years of age, whose circumstances were good; and only a total of thirteen such cases from all classes of society under the age of fifty. It is, perhaps, interesting to note, although of no special importance as far as the origin of the disease is concerned, that out of the total said to have contracted the disease in Colorado, only six are known to have been born in the state; and of these six, one was a drunkard and another a miner.

Altogether, my own personal conviction, held for many years and expressed emphat-

ically in this paper, that most Coloradoans are practically immune to pulmonary tuberculosis, has been greatly strengthened by the present investigation. I do not know on what basis the statement as to the constant presence in Denver of a thousand indigenous cases could possibly have been made, but I am certain that its truth should not only be flatly denied, but that the total should be divided by at least seven. I find that the duration of the disease in thirty-nine of the eighty-seven cases, that of the remainder being unknown, was a total of one hundred and forty-eight years, or an average of three and eight-tenths. Four of these alone, presumably partially arrested cases, lasted forty-eight years, so that the average for the remaining thirty-five was a little less than three years, and this, I think, comes fairly near the truth. If, however, we accept even an average of four years, and admit that, including cases of miner's phthisis, there are, judging from the year investigated, only about thirty-seven cases developed annually in Denver, one hundred and fifty at most would represent the number of cases living here at any one time.

During the year 1918 to 1919, in New York City, with a population of about 5,800,000, there were 8,500 deaths from pulmonary tuberculosis, or one to every 682 of the population. Comparing this with Denver, assuming a population of 250,000, and accepting the total deaths from indigenous cases reported for Denver, 87, this would amount to one death to every 2,870 of the population, or about one-fourth the rate of New York City. If, however, the results of my investigation are accepted, i. e., nineteen unequivocal cases, plus six as a fair estimate of doubtful cases, and not including miner's phthisis since it is a vocational disease incident only to certain localities, we obtain a total of twenty-five cases, or one to every 10,000 of the population of Denver. Disregarding the fact that cases originating in New York City do not all die there, but that, on the contrary, probably a very considerable proportion seek a climatic cure outside of the city itself, a factor which would influence the Denver mortality in far less de-

gree, we may therefore affirm that in Denver the danger of a tuberculous pulmonary infection is only one-fifteenth of that in the City of New York. During the year included in the present investigation, the total of deaths in Denver from phthisis was about 520, or one to every 480 of the population as against one to every 682 in New York City—about forty percent greater. That notwithstanding such possibilities of contagion as are suggested by the influx of consumptives indicated by this mortality, and by the still greater number who live on in our midst in a more or less arrested stage, Denver can show a mortality from indigenous pulmonary tuberculosis of only seven percent of that of New York, certainly demonstrates a high degree of immunity to this disease among those who are privileged to live in the State of Colorado.

In closing, the attention of our large insurance companies should be called, not only to the facts stated, but also to the importance, to themselves above all others, of the light they might throw upon this whole question. If the New York Life Insurance Company, for example, would simply tell us the number of death claims paid during any considerable period to the families of Coloradoans who had died of consumption, noting, of course, the record as to duration of disease and length of residence in the state, such a report would be of the greatest possible service and interest. I am confident that the comparison of such a report with that of other localities would have an enormous influence upon the estimate of Colorado risks, and of those from other Rocky Mountain regions which have a similar climate.

342 Metropolitan Building.

Discussion of this paper appears in this issue in the report of the meeting of October 21 of the Medical Society of the City and County of Denver.

Among a list of speakers who have signified to the Denver Federation for Charity and Philanthropy their willingness to deliver lectures gratis before various organizations of the city appear the names of the following Denver physicians: Wm. H. Crisp, Pearl Wheeler Dorr, J. Gelien, F. P. Gengenbach, Robert S. Irwin, Minnie C. T. Love, Chas. N. Meader, Elsie Seelye Pratt.

Minutes of the House of Delegates
of the

Forty-Ninth Annual Meeting of the Colorado
State Medical Society

Held at Denver, October 7, 8, and 9, 1919

First Meeting of the House of Delegates, October 6, 1919

The House of Delegates met at the Assembly Hall of the Medical Society of the City and County of Denver, and was called to order at 8 p. m. by the President, Dr. F. H. McNaught.

The Secretary called the roll and the President announced a quorum present.

The minutes of the previous meeting were adopted as published in the October, 1918, issue of Colorado Medicine.

President McNaught made a few remarks and suggestions concerning the approaching Semi-Centennial of the Society, expressing the hope that the Nominating Committee would exercise great care in the selection of officers and place of meeting.

The President then announced the following Reference Committees:

Reference Committee on Reports of Officers—Melville Black, Chairman; C. E. Giffen, H. S. Henderson.

Reference Committee on Reports of Committees—W. T. H. Baker, Chairman; Ella A. Mead, C. E. Cooper.

Reference Committee on Miscellaneous Business—W. A. Kickland, Chairman; L. W. Bortree, R. W. Arndt.

Committee on Appropriations—L. E. Likes, Chairman; W. W. Crook, A. S. Taussig.

Auditing Committee—H. B. Whitney, Chairman; S. B. Childs, G. M. Blickensderfer.

The Secretary, Dr. J. C. Epler, presented his report, which was referred to the Reference Committee on Reports of Officers. The report is as follows:

REPORT OF THE SECRETARY.

This, the fifth annual report of your Secretary, is hereby submitted for consideration.

The membership has gradually grown, though slowly, until at this time it is a little larger than it has ever been before.

There has been received one application for a charter to conduct a society in Chaffee County, with headquarters at Salida. The by-laws have been submitted and approved, and it is recommended that the charter be granted.

The following are the societies with number of members and the amounts paid for 1919 set opposite their names:

Reinstated after the annual session of 1918.

Society	Paid Mem- bers.	War Mem- bers.	Collected.
Boulder	2	..	\$ 6.00
Denver	7	..	21.00
Fremont	1	..	3.00
Montrose	1	..	3.00
Routt	4	..	12.00
Unattached ..	1	..	3.00
Totals	16	..	\$ 48.00

Paid during 1919.

Boulder	37	7	\$ 111.00
Delta	12	7	36.00
Denver	342	56	1,026.00
El Paso.....	70	16	210.00
Fremont	15	1	45.00
Garfield	10	2	30.00
Huerfano	9	..	27.00
Lake	12	..	36.00
Larimer	27	2	81.00
Las Animas...	24	5	72.00
Mesa	19	2	57.00
Montrose	10	..	30.00
Morgan	2	..	6.00
Northeast	18	..	54.00
Otero	17	2	51.00
Prowers	13	..	39.00
Pueblo	48	15	144.00
San Juan.....	8	2	24.00
San Luis.....	23	..	69.00
Routt	7	1	21.00
Teller	9	..	27.00
Weld	26	3	78.00
Unattached ..	13	..	39.00
Totals	771	121	2,313.00

Total Collections Turned Over to Treasurer

\$2,361.00

CRUM EPLER,
Secretary.

The Acting Treasurer, Dr. William H. Crisp, presented his report, which was referred to the Auditing Committee. The report is as follows:

REPORT OF THE TREASURER.

From September 9, 1918, to October 7, 1919.

RECEIPTS.

Balance on hand Sept. 9, 1918.	\$2,140.25
Liberty bond (face value).....	1,000.00
From Secretary, dues.....	2,361.00
From Editor, Colorado Medicine, gross advertising receipts	1,605.69
Paid by authors for cuts....	48.41
Individual subscriptions to Colorado Medicine	18.85
Interest on savings account....	66.80
Interest on liberty bond.....	57.40

Total of balance on hand, bond and receipts

\$7,298.40

DISBURSEMENTS.

Journal Maintenance.

Western Newspaper Union....	\$2,007.19
Western Press Clipping Bureau	36.00
Dr. Wm. H. Crisp, editor's salary	150.00
Dr. F. B. Stephenson, editor's salary	150.00
Dr. F. B. Stephenson as associate editor	100.00

Advertising commissions	353.45
Denver hand-delivery of journal	33.50
Stationery and supplies.....	1.80
Postage	1.25
J. M. Stapleton, postmaster, postage	25.00
Carson, Harper & Co., printing and postage	22.50
W. H. Kistler Co., supplies....	2.20
	<hr/>
	\$2,882.89

Secretary's Office.

Dr. C. W. Maynard, secretary's salary	\$ 200.00
Incidentals and stamps.....	3.00
Clerk	120.00
Wm. Whitford, reporter.....	120.42
A. M. A., directory.....	10.00
Riverside Printing Co., printing	128.25
	<hr/>
	\$ 581.67

Library.

Books—Paul B. Hoeber.....	\$ 1.80
The McMillan Co.....	8.53
Clement R. Troth.....	112.97
The Architectural Record Co.	5.00
J. B. Lippincott Co....	7.00
Dr. E. B. Jacobs.....	10.00
D. Appleton & Co.....	7.00
	<hr/>
	\$ 152.30

Committee on Public Policy.

Postage	\$ 1.87
Stenographer	2.50
Western Newspaper Union....	10.40
	<hr/>
	\$ 14.77

Total disbursements \$3,631.63

Balance on hand at date of report..... \$3,666.77

WM. H. CRISP,
Acting Treasurer.

Dr. Edward Jackson, Chairman of the Committee on Scientific Work, stated that requests had been made by the American Red Cross and the Anti-Tuberculosis Society for ten minutes each to present to the society their plans for work in the near future. On motion made by Melville Black, seconded by G. A. Moleen, the Committee on Scientific Work was authorized to grant a suitable place on the program, in accordance with the requests of these two organizations.

Dr. D. A. Strickler, Chairman of the Committee on Public Policy and Legislation, presented his report, and on motion duly made and seconded the report was referred to the Reference Committee on Reports of Committees. The report is as follows:

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

The efforts of your Committee in the past year have been largely directed to the securing of state legislation in matters which concerned the public welfare or the enhancement of the interests of the medical profession; also the suppression of such proposed legislation as seemed inimical to those interests.

Following instructions issued at the 1918 annual meeting of the Society, special attention was given to a bill calling for the establishment and maintenance of a psychopathic

hospital and laboratory for the care of the acutely and curably insane. The bill was finally passed by both houses; unfortunately, however, without an appropriation clause, so that the measure is ineffective until such time as an adequate appropriation shall be made. The passage is, nevertheless, a definite step towards the actual accomplishment of the plan.

Your Committee supported a bill calling for annual registration of physicians for the purpose of aiding in the administration of the medical practice act passed by a vote of the people in the general election of 1916. This bill passed the Senate and the first and second readings in the House, where it was defeated on the third reading through the active opposition of a member who was supposed to be its friend.

Other bills supported were:

A bill calling for modifications of the Workmen's Compensation Law. In this the total amount allowed for medical and surgical treatment was increased from one hundred to two hundred dollars and the total number of days increased from thirty to sixty. A special committee will report on this bill.

A bill for the establishment of a State Department of Health to be presided over by a Commissioner of Health, who should devote all of his time to public health matters of the state. This bill failed to pass, though the present law was amended and a larger appropriation was allowed, opening up a larger field of opportunities to the State Board of Health.

A bill to create a Venereal Division of the State Board of Health to carry out the Government program for the prevention and treatment of Venereal Diseases. It provided for a State Director in the State Board of Health and carried an appropriation of approximately eight thousand dollars. The plan set forth by the United States Public Health Service is to establish in various communities of the state Government Venereal Disease Clinics, and to educate the people by means of lectures, pamphlets, placards, and moving picture shows. The bill passed.

A bill to establish and maintain a State Detention Home for Women suffering with Venereal Diseases, providing for their commitment and detention with treatment under the general supervision of the State Board of Health. The bill failed because of a technical difficulty—the State Board of Health cannot legally acquire or control property. It is thought a means may yet be devised to meet the difficulty before another legislative body.

A bill calling for Medical Inspection in the Public Schools, which was defeated largely by Christian Science opposition.

A bill to establish State Supervision over Teaching Institutions to the end that such institutions might not receive a state charter nor be permitted to operate without meeting definite property and educational standards (our interest being mainly in the prevention of the issuance of fraudulent degrees used to mislead the public in the practice of the healing art). The bill met the determined opposition of the sectarian schools and colleges and was not pushed. This is an important question, which should be met, but which thus far in our efforts seems to involve the control of sectarian (religious) schools as well.

Active opposition of your Committee was

instrumental in defeating a pernicious house bill relating to drugless healing.

The Committee wishes to express before the Society its appreciation of the service rendered and interest shown in the matter of the Psychopathic Hospital bill by Judge Ira C. Rothgerber, who labored with the members in preparing it and who advised and assisted in putting it properly before the legislature.

Respectfully submitted,

DAVID A. STRICKLER, Chairman.

F. B. STEPHENSON, Secretary.

Dr. G. A. Moleen moved, and it was duly seconded, that the motion to refer be amended to instruct the Reference Committee to prepare an expression of appreciation of the Society to Judge Rothgerber for his work in connection with the bill for provision for the insane.

The amendment was carried, and the original motion as amended was also carried.

Dr. C. B. Van Zant, Chairman of the Committee on Medical Education, presented his report, and the same was referred to the Reference Committee on Reports of Committees. The report is as follows:

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION.

The chaos which has characterized the work in our medical schools, in both the teaching and student body, during the war period is now happily ended. With the return of the teachers to their posts and the resumption of the pre-war schedule of work by the students, the wheels of medical education are again revolving without friction or limitation.

The experiences and observations of the Medical Department of the Army have emphasized the importance of the "establishment of Reserve Officers' Training Corps at the medical schools, where members, when called from civilian life to military service, will be competent to perform the essential duties of medical officers in the army without further training". This plan has met with the unanimous approval of the Army Medical Department and of the Association of American Colleges, and already steps have been taken by the government to work out the details of such training both in the medical schools and in summer military camps. Our own University of Colorado Medical School in the present session has arranged for forty-four hours of instruction in this important subject by Lieut. Col. John R. Barber, M. C., U. S. A.

In regard to the curriculum, it seems to your Committee that an enlargement of its scope, to keep pace with phases of medicine urgently calling for attention, is practically inevitable. Among these subjects now very largely ignored in most of our colleges may be mentioned climatology, hydrotherapy, psychotherapy, medical gymnastics, life insurance examinations, industrial hygiene and occupational diseases. It is true that the introduction of new subjects into an already heavily burdened course of study is necessarily difficult; but the great need justifies the action, even if it involves much thought and skillful planning.

Hospital standardization has occupied much attention during the past year, and an earnest effort is being made on the part of many hospitals better to meet their obligations toward medical teaching. Teaching hospitals, indeed, are the present great need of medical

education, both for undergraduates and for graduates who are taking up specialties. An insistent demand is developing for amply endowed postgraduate schools, with sufficiently long courses and connected with state universities and hospitals, where thorough preparation in any specialty can be had and where a special certificate of efficiency or a special degree can be obtained. Since 1912 our state university has been a pioneer in this respect, giving a postgraduate course leading to the special degree of Doctor of Ophthalmology. In the training of all the specialties, including that of internist, the same need of suitable postgraduate instruction prevails, and it has led to the organization of the American Postgraduate Union, which has vigorously taken up the prosecution of these objects.

It is gradually coming to be recognized that, as the art of general teaching requires of its votaries special preparation for their life work in normal schools, there will ultimately develop a need for the special training of would-be instructors in medical schools in the proper methods of medical teaching. Sooner or later haphazard medical instruction must give way to trained teaching, based not only on large professional attainments, but on sound pedagogic methods and ability.

The strengthening of the high-grade medical schools inevitably means larger endowments, new buildings, increased facilities, full-time salaried chairs, enlarged curricula and added years of instruction.

These are the problems to which medical education in Colorado, as elsewhere, must apply itself if the lessons of the past and present are to be seized and the future made sure and progressive. Respectfully submitted,

C. B. VAN ZANT, Chairman;

H. W. BOAGLAND,

G. A. MOLEEN,

Dr. S. B. Childs, Chairman of the Committee on Arrangements, made a verbal statement setting forth the plans of the Committee for the entertainment of the visiting members and ladies during their stay.

Dr. G. A. Moleen, Chairman of the Committee on Cooperation with the State Pharmaceutical Association, presented his report, and the same was referred to the Reference Committee on Reports of Committees. The report is as follows:

REPORT OF THE COMMITTEE ON COOPERATION WITH THE STATE PHARMACEUTICAL ASSOCIATION.

Your Committee on Cooperation with the Colorado State Pharmaceutical Association has endeavored to meet with the corresponding committee of the Colorado State Pharmaceutical Association without success and inquiries have been made individually by members of the Committee to ascertain the need of action in any subject of mutual interest. The only question which seems to require attention is that concerning the availability of alcohol for technical purposes and the manufacture of liquid alcoholic medicines, the general consensus of opinion being that there should be no difficulty in the obtaining by physicians of pure grain alcohol for office or professional use.

Thus your Committee respectfully recommends to the action of the succeeding committee.

GEO. A. MOLEEN, Chairman.

G. W. MIEL.

G. M. BLICKENSDECKER.

Dr. Henry Sewall, Chairman of the Committee on Medical Literature, submitted a report, which was read by the Secretary and referred to the Reference Committee on Reports of Committees. The report is as follows:

REPORT OF THE COMMITTEE ON MEDICAL LITERATURE.

At a meeting of the House of Delegates of the Colorado State Medical Society held September 10, 1918, "Dr. Crisp stated that within two years the Colorado State Medical Society would have reached its fiftieth anniversary, and suggested that it would be appropriate to have a committee appointed to consider the medical history and medical literature of Colorado and present a report to the Society for action. Accordingly he moved that such a committee be appointed with instructions to present such a report at the next annual meeting, so that the House of Delegates could take such action regarding the fiftieth anniversary as might be appropriate." The motion was tabled until a subsequent meeting, when "The president appointed the Committee on Medical Literature called for by Dr. Crisp's motion, Dr. Henry Sewall, Chairman; Dr. Walter A. Jayne, Dr. G. A. Boyd, Dr. O. M. Gilbert and Dr. C. D. Spivak, Secretary".

Your Committee has met in full session and set in motion plans for carrying out the objects for which it was appointed, subject to the approval of the House of Delegates.

Your Committee is impressed with the unique conception of erecting as an anniversary memorial a permanent monument to the scientific and literary contributions of the Medical Profession of Colorado. Such an achievement would be unparalleled in our country. Its adequate accomplishment would redound greatly to the credit of our medical personnel. It should go far towards raising to its true value esteem for our profession in the community; it would win approbation and set a shining mark for medical bibliography throughout the world, and would prove of considerable value to the student of medical research literature. These results would be contingent on the fullness and accuracy with which such an index of Colorado Medical literature would be compiled.

The time will never come again when the task will be so easy as at present. Already the material for collation is so voluminous and scattered that its identification and presentation will require the coordinate efforts of many devoted workers.

A letter has recently been addressed to the secretary of every County Medical Society in the state setting forth the purpose of the Committee and requesting the appointment of local subcommittees to cooperate with it.

To this, cordial and appreciative replies have already been received from Otero, Larimer, Boulder, Denver, El Paso and Fremont counties.

It goes without saying that any bibliographic exhibit must be prepared with sufficient care to assure accuracy, but it is doubtful whether it would be worth while to skim the surface of the literature and record only the few salient articles of conspicuous merit. It is believed that the onerous task of collating the titles of Colorado Medical Literature should be done thoroughly and completely or not at all. This accomplishment would involve considerable expense. It is roughly cal-

culated that the proposed bibliography would fill a volume of three hundred pages of about three hundred words to the page, it being suggested as being desirable to include a brief biographical sketch of each author.

It is calculated that the clerical work necessary to the compilation and typewriting of material and preparing it fully for the printer would cost \$250. It is estimated that the printing of one thousand copies of a book of three hundred pages would cost \$1,250, the total appropriation required being approximately \$1,500. These figures are presented without preliminary conference with a printer. It is suggested that the completed work might be sold to members of the Society at cost.

HENRY SEWALL, Chairman.

W. A. JAYNE.

C. D. SPIVAK, Secretary.

The report of the Committee on Emblem for Physicians' Automobiles, by Dr. H. G. Wetherill, Chairman, was read by the secretary and was referred to the Reference Committee on Reports of Committees. The report is as follows:

REPORT OF COMMITTEE ON EMBLEM FOR PHYSICIANS' AUTOMOBILES.

Your Committee desires to report that since the last annual meeting of the State Society, the American Medical Association has adopted a universal emblem for all physicians' cars throughout the United States. This action was taken by the Trustees at the suggestion of the chairman of your Committee.

Inasmuch as this action has been taken by the Board of Trustees of the American Medical Association, and this emblem will now be universally adopted, your Committee would recommend that the action taken at the last meeting tentatively adopting a state emblem for the members of our Society be rescinded, and that the national emblem be adopted as the emblem for all Colorado physicians' cars.

HORACE G. WETHERILL, Chairman.

J. J. PATTEE.

J. W. LEHAN.

The report of the Committee on Provision for the Insane was read by Dr. D. A. Strickler and was referred to the Reference Committee on Reports of Committees. The report is as follows:

REPORT OF THE COMMITTEE ON PROVISION FOR THE INSANE.

In accordance with instructions of the House of Delegates your Committee had reports of an article dealing with the shortcomings in the care of the insane in the State of Colorado distributed through the secretaries of the various constituent societies.

A bill was drafted for an act to establish, construct and maintain a psychopathic hospital and laboratory, and to make an appropriation therefor, which was introduced in the state legislature; and after considerable work of the Committee and meetings with various committees from the senate and house of representatives, the bill was finally passed without an appropriation with the approbation of the Committee, inasmuch as it was definitely stated that no appropriation would be made by the Committee on Appropriations, and it was the opinion of this committee that it would be preferable to place the law on the statutes and endeavor to secure an adequate sum to carry out the provisions of the bill at a later date—a plan which would be more

likely to succeed than were a similar measure to be introduced anew.

It is recommended therefore, that the Society begin a campaign leading to the referring of the appropriation to public vote, suggesting, further, the wisdom of canvassing each community through the local secretaries of the county societies for signatures necessary for such referendum.

We, therefore, offer the following resolution for the consideration of the society:

BE IT RESOLVED, That the Colorado State Medical Society institute a campaign for the purpose of securing the necessary signatures to refer to a vote of the people at the next general election a bill appropriating the necessary funds to purchase suitable grounds and to construct and maintain a psychopathic hospital and laboratory in accordance with the statute passed at the last general assembly of the legislature.

Respectfully submitted,

DAVID A. STRICKLER, Chairman.

Dr. Melville Black made a statement concerning a request from the members of the Denver School Board, to the effect that the Colorado State Medical Society, or its House of Delegates, support a request to Governor Shoup that a bill for medical inspection in the public schools be included in a call for a special session of the legislature, if such a call was issued. Dr. Black moved that the Committee on Miscellaneous Business be instructed to formulate a resolution to be acted upon at an open meeting of the Society. After discussion, the motion, being put to a vote, was declared lost. A roll call being demanded by Dr. Black, the motion was carried—nineteen ayes and ten noes.

Chaffee County Charter.

The Secretary presented a request of Chaffee County doctors for a charter to operate a county society, and moved that the request, together with the by-laws, which he had examined and approved, be referred to the Committee on Miscellaneous Business.

Committee on Migratory Consumptives.

Dr. A. S. Taussig made a statement concerning a campaign which was being conducted by Dr. Severance Burrage for the preparation of statistics, which would subsequently be presented to Congress in connection with a movement for a bill dealing with the problem of migratory consumptives. The President was instructed to appoint a committee and appointed Dr. William H. Crisp, Dr. W. A. Jayne and Dr. Hiram R. Stillwill.

The President then called for nominations for the Nominating Committee, and the following were nominated: Dr. Melville Black, Dr. H. A. Smith, Dr. W. T. H. Baker, Dr. L. W. Bortree, and Dr. W. W. Crook.

On motion, duly seconded, the nominations were closed and the Secretary instructed to cast the ballot. The ballot being cast, the President announced the nominees elected.

On motion of Dr. T. E. Carmody, the House of Delegates adjourned until 9 o'clock a. m., October 7, 1919.

Second Meeting of the House of Delegates, October 7, 1919

The House of Delegates met at 9 a. m. and was called to order by the President.

The Secretary called the roll, and the President announced a quorum present.

The minutes of the previous meeting were read and approved.

Dr. Melville Black moved that the sum of one hundred and twenty dollars per annum be allowed Dr. Stephenson, Editor of Colorado Medicine, this sum being as compensation to his stenographer for her assistance in getting out this magazine.

The motion being duly seconded, the matter was referred to the Appropriations Committee.

Amendment to By-Laws.

On motion of Dr. Melville Black, duly seconded, an amendment to the by-laws, Chapter vii, Section 4, proposed at the previous annual meeting of the Society, to be acted upon at the meeting of 1919, was adopted. The amendment reads as follows: "The Officers shall be installed at the last general meeting of the annual session, except the President, who shall be installed at the first general meeting of the annual session following that at which he was elected."

Dr. Philip Hillkowitz, Chairman of the Publication Committee, read the report of that committee, and on motion of Dr. Bortree, duly seconded, the same was referred to the Reference Committee on Reports of Committees. The report is as follows:

REPORT OF THE PUBLICATION COMMITTEE.

Thirteen numbers of our official journal have been issued since the last report of the Publication Committee in 1918. They comprise 342 pages of reading matter, of which 129 are devoted to papers presented and discussions thereon at the 1918 state meeting and 68 to original articles. The remainder, 145 pages, consist of editorials, book reviews, news notes, proceedings of the House of Delegates and reports of county medical society meetings. The last mentioned item is a perplexing problem to the Committee. If the scientific status of the various county societies of the state were to be gauged by what is published of their transactions in Colorado Medicine, many of them would be considered practically non-existent. This is entirely due to the inertia of the respective secretaries. We have no remedy to offer except to urge on them again the importance of showing up their locality in the proper light, thus stimulating the rest to equal or better results.

Fifty-one books and other publications were reviewed and deposited with the Library of the State Society in the custody of the Library of the Medical Society of the City and County of Denver.

The gross expenditure on the journal for the thirteen months was \$2,882.89. Gross receipts for advertising, subscriptions and individual sales amounted to \$1,672.95. To these receipts are to be added the \$2.00 per capita appropriation amounting to \$1,768.00. Total, \$3,440.95. Subtracting the expenditures there is a balance left in the hands of the treasurer to the credit of Colorado Medicine of \$547.72.

In common with the general advance in labor and commodities, the price of printing the journal shot up 30 percent with the November, 1918, issue. We have been advised of another rise of from 30 percent to 60 percent on the various items that go to make up our publication, to go into effect in October, 1919.

The absence of so many of our members who were in active service has necessarily reacted on the number of papers at our annual

meetings. With their return we expect a revival of interest in our society meetings and increased enthusiasm for our state journal. We purpose in the coming year to enliven the interest of our members with editorial comments of scientific and medico-sociological import which will stimulate discussion both at the meetings of the constituent societies and in our journal.

In conclusion we desire to express our thanks to our editor, Dr. Frank B. Stephenson, who, single handed, has carried on his shoulders the burden of the numerous details connected with the publication of Colorado Medicine; also to his predecessor, Dr. W. H. Crisp, who conducted the editorial department until April, 1919, and had given his brilliant talents to our journal for a number of years.

PHILIP HILLKOWITZ, Chairman.

Dr. Melville Black then read the report of the Delegates to the American Medical Association, and on motion, duly seconded and carried, the same was referred to the Reference Committee on Reports of Officers.

On motion made, seconded and carried, the meeting adjourned until 8:30 o'clock a. m. Wednesday, October 8, 1919.

Third Meeting of the House of Delegates, October 8, 1919

The House of Delegates met at 8:30 o'clock a. m., pursuant to adjournment, and was called to order by the President.

The Secretary called the roll and the President announced a quorum present. The minutes of the previous meeting were read and approved.

Dr. Melville Black then presented a Report of the Reference Committee on the Reports of Officers, and on motion, duly seconded, the same was adopted. The report is as follows:

REPORT ON PRESIDENT'S ADDRESS BY REFERENCE COMMITTEE ON REPORTS OF OFFICERS.

In the address of our President he says:

"We should have at Washington a representative, a Secretary of Health. Sanitary, health and hospital problems could then be brought directly under the observation of our legislative bodies. Such a representative would be in a position to bring before Congress measures for legislative enactment and enforcement which would materially assist in our efforts for the upbuilding of medical standards, in the advancement of medical reforms and especially in safeguarding the people against preventable diseases."

We would recommend that an epitome of the above be forwarded by the Secretary to each of our senators and congressmen in the form of a resolution adopted by this body.

MELVILLE BLACK, Chairman.
H. S. HENDERSON.

Dr. O. M. Shere then presented the report of the Committee on Workmen's Compensation Act. The report is as follows:

REPORT OF THE COMMITTEE ON THE WORKMEN'S COMPENSATION ACT.

At the last meeting of this body the Committee on the Workmen's Compensation Act was moved to recommend that a special committee be appointed with instructions to urge the legislature that the Industrial Compensation Act should provide:

"1. That reasonable surgical, medical and

hospital services, medicines and supplies, as and when needed, shall not be limited to the first thirty days after the disability begins, but shall be furnished during the entire period of the disability.

"2. That the one hundred dollar limit for medical, surgical and hospital fees be abolished and that the hospital and nursing costs be placed in a separate item.

"3. That, realizing the urgent need for a schedule of specific charges in respect to injury, such a schedule of fixed prices shall be agreed upon by a committee of medical men appointed by the State Medical Society for that purpose and the Industrial Commission, and only after such agreement shall the accepted schedule be embodied in the Act amended."

Your Committee is pleased to report that the Industrial Compensation Act has been improved in two of the three respects noted and some concessions granted touching the third desideratum.

Through the insistence of your Committee the period of disability has been extended from thirty to sixty days and the maximum amount which it is allowable to spend on the injured employé is now two hundred dollars instead of one hundred dollars.

The Industrial Commission is inclined to concede that the fees for the care of an injured employé under the act should be regulated by the fees obtained by physicians in open competitive practice, but it is contended that any change in the schedule of the fees would disarrange the relations between employing concerns and the insurance companies that protect them. The Commission has intimated, however, that it will not, itself, enforce the present schedule.

The Committee therefore urges the members of the Colorado State Medical Society to refuse to attend cases of injury for any less fees than those which are already established in every community by the economic forces therein at work.

When the habitual resistance of a Colorado legislature to representations from the medical profession is recalled, this Committee is not displeased with the results of its work, and it is its hope that the next legislature will adopt a satisfactory amendment to the existing law relative to a fee schedule, which is the only outstanding unsatisfactory feature as applied to the medical profession.

Respectfully submitted,

O. M. SHERE, Chairman.
C. S. ELDER.
R. W. ARNDT.
W. W. GRANT.
MELVILLE BLACK.

Dr. W. T. H. Baker, Chairman of the Reference Committee on Reports of Committees, presented a report, and on motion, duly seconded and carried, the same was adopted. The report is as follows:

REPORT OF REFERENCE COMMITTEE ON REPORTS OF COMMITTEES.

Your Committee reviewed the report of the Committee on Cooperation with the Colorado Pharmaceutical Association and believe that the request for an effort to obtain legislation permitting the physicians of the state to secure grain alcohol for medicinal purposes is inadvisable at the present time, because there already exists a method by which alcohol may

be obtained for such purposes, namely, a surety bond costing \$2.50, issued by several companies, and the registration of such bond with the Secretary of the State of Colorado and the United States Custom Office. Suitable blanks will be furnished by both the state and the United States government which, when properly filled out, will enable any physician to secure a desired quantity and quality of alcohol. The total cost for bond, registration, blanks, etc., would be less than \$5.00.

The report of the **Committee on Provision for the Insane** was reviewed, and your reference committee desires to record itself in favor of the recommendations of the above committee. We also would recommend that the committee having this matter in charge be continued.

The report of the **Committee on Emblem for Physicians' Automobiles** was reviewed and we wish to record our approval of the suggestion of such committee, namely, that the national emblem be adopted by this society and that the committee be discharged.

The report of the **Committee on Medical Literature** has been reviewed and we feel that while the action of this committee is most worthy, under present conditions, and with the advance in prices which printers are to make, action should be delayed at least until an accurate estimate of the cost can be given. We feel that such a compilation would be a lasting memorial. We would suggest further that the present committee be continued.

The report of the **Publication Committee** has been reviewed and we recommend that it be received and placed on file.

The report of the **Committee on Medical Education** was reviewed and we desire to commend them most heartily for the interest with which they have kept in touch with the problem of medical education, as well as the thoroughness of their report. We believe the best results, in so far as the State Society is concerned, would be obtained by continuing this committee in their present capacity.

We have reviewed the report of the **Committee on Public Policy and Legislation** and feel that they have done a vast amount of good work. We concur in their recommendation where they express their desire that Judge Ira C. Rothgerber, who labored with the members in preparing the bill, and who advised and assisted in putting it properly before the legislature, be advised of the Society's appreciation. We suggest that the Society express this appreciation by a rising vote of thanks to Judge Rothgerber.

This Committee desires to express its thanks and appreciation to those committees who have labored so well in behalf of the State Society and we commend their efforts and labors.

W. T. H. BAKER, Chairman.
ELLA MEAD.
C. E. COOPER.

Secretary Epler then moved that the matter of the **Report of the Committee on Cooperation with the Colorado State Pharmaceutical Association** be referred to the incoming committee. The motion, being duly seconded and put to a vote, was carried.

Dr. W. A. Kickland, Chairman of the Committee on Miscellaneous Business, asked for further time in which to report, and on motion, duly seconded and carried, further time was granted.

Proposed Amendment to Constitution.

Dr. Melville Black proposed the following amendment to the constitution, which according to Article XII of the constitution was held over for action at the next annual session:

Art. VIII Sec. 3. "The officers shall be elected on the morning of the last day of each annual session." The remainder of the section to be stricken out.

Postgraduate Teaching.

Dr. Hubert Work made a verbal statement as a representative of the American Medical Association, outlining to the House of Delegates a plan of postgraduate teaching. He suggested that the House of Delegates select a teaching body from its membership of perhaps fifty men, dividing these men into teams of four men each, getting the permission of twelve county medical societies, these teams to start, for example, at Sterling and to reach around through Boulder, Denver and as far east as Lamar. He further suggested that these twelve teams of physicians should teach on one subject, in order that there might be no duplication, alternating the days of the month on which they would teach—for example, the first Tuesday in the month at Sterling and at Fort Morgan the third Tuesday, thus avoiding a possible conflict of dates for teaching. These teams, speaking twice each month, with twelve medical societies to address, the doctor stated, would complete the course in six months.

On motion of Secretary Epler, duly seconded and carried, the matter was referred to a special committee to be appointed by the President, to bring in a report not later than the morning of October 9th. The President, in accordance with the motion, appointed the following committee: Dr. J. N. Hall, Denver; Dr. Hubert Work, Pueblo, and Dr. O. M. Gilbert, Boulder.

The House of Delegates thereupon adjourned until October 9th, at 8:30 o'clock a. m.

Fourth Meeting of the House of Delegates, October 9, 1919

The House of Delegates met, pursuant to adjournment, at 8:30 o'clock a. m., and was called to order by the President.

The Secretary called the roll and the President announced a quorum present.

The minutes of the previous meeting were read and approved.

NOMINATIONS.

The Secretary read the report of the Nominating Committee, nominating the following officers: President: F. R. Spencer, Boulder.

First Vice President: W. S. Chapman, Walsenburg.

Second Vice President: Josephine Dunlop, Pueblo.

Third Vice President: G. C. Carey, Grand Junction.

Fourth Vice President: B. Woodcock, Greeley.
Publication Committee: George A. Moleen, Denver.

Councillor: W. W. Grant, Denver, District No. 2.
Meeting Place, 1920: Glenwood Springs.

Delegate to the American Medical Association: Gerald B. Webb, Colorado Springs.

Alternate: H. G. Wetherill, Denver.

On motion, made and seconded, amended by Dr. Moleen, the rules were suspended, the nominations closed and the Secretary instructed to separately cast the unanimous ballot for the officers and delegates as submitted by the Nominating Committee.

The Secretary then read the report of the Auditing Committee, and on motion, made, seconded and carried, the same was adopted. The report is as follows:

REPORT OF THE AUDITING COMMITTEE.

We have examined the accounts of the Acting Treasurer and find them correct.

H. B. WHITNEY, Chairman.

Dr. Kickland then read the report of the Committee on Miscellaneous Business, and on motion, seconded and carried, the same was adopted. The report is as follows:

REPORT OF COMMITTEE ON MISCELLANEOUS BUSINESS.

Your Committee on Miscellaneous Business begs to submit the following report: Senate bill No. 261, House Bill No. 58, submitted at the last session of the state legislature, which provides for **Medical Inspection of Schools**, is approved and its passage is requested. In order that this bill may come up before the extra session it will be necessary that the governor include it in his call for the extra session.

It is therefore moved that the House of Delegates of the Colorado State Medical Society sanction the report of this committee and request the governor to include this bill in his call for the extra session.

We also request that the **application of the physicians of Chaffee County for a charter** as a constituent society, as contained in their request of March 19, 1919, be granted.

W. A. KICKLAND, Chairman.

L. W. BORTREE.

Dr. W. W. Crook then submitted the report of the Committee on Appropriations and moved its acceptance. The motion, being duly seconded and put to a vote, was carried. The report is as follows:

REPORT OF COMMITTEE ON APPROPRIATIONS.

The following appropriations are recommended:
 Colorado Medicine, \$2.00 per member..
 Editor's salary 300.00
 Incidentals and Printing..... 250.00
 Programs and Postage..... 90.00
 Public Policy 150.00
 Secretary's Clerk 120.00
 State Library 150.00
 Stenographer for the annual meeting..... 250.00
 Secretary's salary 200.00
 Editor's Clerk 120.00

L. E. LIKES.

W. W. CROOK.

A. S. TAUSSIG.

Appropriation for Postgraduate Teaching.

Secretary Epler stated that the postgraduate course, as suggested by Dr. Hubert Work, would entail some expense, and he moved that some amount, under \$300, as may be necessary, be set aside for that purpose. The motion being duly seconded and put to a vote, the same was carried.

Dr. H. A. Smith of Delta then offered the following resolution: In behalf of the delegates from over the state, in behalf of their wives, and in behalf of all of the visitors that have been entertained by the City and County of Denver Society, we wish to formally thank you for the entertainment, as well as for the scientific program; and likewise we want to inform you that it is the sentiment of all outside people that this is by far the best meeting that Denver has ever had, and it is excelled by only a few that have been had

in the state at any time. I wish to offer this in the form of a motion.

The resolution being duly and regularly seconded and put to a vote, was unanimously carried.

Dr. Melville Black then offered a resolution tendering a vote of thanks to Miss Menig, the Assistant Secretary of the County Society, for the services rendered during the meeting, in the library, in assisting the members in registering and generally promoting the welfare of this meeting. The resolution being duly and regularly seconded and put to a vote, was carried.

Dr. George W. Miel then moved a vote of thanks to the retiring officers of the Colorado State Medical Society. The motion being put to a vote was unanimously carried.

The privileges of the floor were then extended to Mr. Edward Scholtz, who addressed the House of Delegates on the relations between physicians and pharmacists.

Dr. W. T. H. Baker, Chairman of the Committee on Reports of Committees, then presented the report of the **Committee on Workmen's Compensation Act**, as prepared by Dr. Shere, and on motion of Dr. George A. Moleen, duly and regularly seconded, the same was adopted. The report is as follows:

FURTHER REPORT OF REFERENCE COMMITTEE ON REPORTS OF COMMITTEES.

The report of the **Committee on Workmen's Compensation Act** has been reviewed and we realize the importance of carrying out the recommendation made by the committee, to the end that every member of our society shall regulate his fees when doing work for the Industrial Commission, or any insurance company, in the same manner as he would were these patients treated as private cases.

Your Committee feels that the charges made should be based upon such fees as would be charged this class of patients in private life; this being the only way in which our self-respect can be maintained, as well as efficient service extended to this class of patients.

On motion of Dr. Epler, the First Meeting of the House of Delegates to the 1920 meeting was left to the Committee on Arrangements at Glenwood Springs and the officers of the Society, this to be published in the program and sent out at least twenty days prior to the meeting. The motion being duly seconded and put to a vote was carried.

As there was no further business to come before the meeting, on motion, which was duly seconded and carried, the House of Delegates adjourned sine die.

CRUM EPLER,
Secretary.

THE COLORADO STATE MEDICAL SOCIETY.

(Incorporated November 1, 1888.)

The next meeting will be held in Glenwood Springs, September 7, 8, 9, 1920.

OFFICERS, 1919-1920.

President, F. H. McNaught, Denver.

President-elect, F. R. Spencer, Boulder.

Vice Presidents—1st, W. S. Chapman, Walsenburg; 2nd, Josephine N. Dunlop, Pueblo; 3rd, G. C. Carey, Grand Junction; 4th, B. Woodcock, Greeley.

Secretary, Crum Epler, Pueblo.

Treasurer, W. A. Sedwick, Denver; Acting Treasurer, W. H. Crisp, Denver.

COMMITTEES.

(Appointments to be published later.)

News Notes

Dr. W. A. Sedwick of Denver was honorably discharged from the service on October 31st and immediately returned to Denver. He has resumed the practice of ophthalmology, with temporary quarters at 330 Metropolitan building.

Dr. M. Ethel V. Fraser has returned to Denver from France. Her work there in the devastated region about Chateau-Thierry was of such a character as to earn a decoration from the French government. She will resume practice at her former office in the Mack building.

Dr. William W. Graves, 727 Metropolitan building, St. Louis, Mo., who is engaged in original investigation of malformations of the human scapula, is making an appeal to fellow physicians for human embryological material. Anyone who can get possession of such material will greatly aid Dr. Graves in further study of the "scaphoid scapula" by sending it to him, following these directions:

"It is desired that the material, as soon as possible after delivery, be immersed in 10 per cent formalin in a sealed container, and be forwarded to my address; charges collect. Due acknowledgement will be made to those forwarding material."

Dr. Wm. G. Mudd of Denver has received his honorable discharge from the army medical service and has resumed practice in Denver, with office at 209 Majestic building.

Dr. J. C. Darling, formerly of Antonito, has removed to Durango, where he will practice general medicine.

Dr. C. B. Ingraham of Denver was married October 16, 1919, to Mrs. Agnes Rivi of Denver.

Dr. Frost C. Buchtel of Denver, who has been critically ill, has recovered sufficiently to go to Hot Springs, Arkansas, where it is hoped the climate will be more favorable for his convalescence.

The city health department of Denver is making plans for the establishment of a city dispensary, where free medical attention can be given to the indigent of Denver. Estimates of the cost of the project will be included in the department's budget for the coming year.

Nearly twenty thousand newspapers and other advertising media appealed to by the United States Public Health Service to discontinue publishing advertisements of quack doctors and nostrums dealing with venereal diseases have pledged their active support in the campaign to give the reading public this measure of protection.

El Paso County News.

Dr. Edward Moore, treasurer of the El Paso County Medical Society, has gone to California for his health. Dr. C. E. Richmond has been appointed treasurer.

Dr. Z. H. McClanahan has returned from a trip to the Mayo Clinics.

Dr. F. A. Faust is enjoying a motor trip through the Grand Canyon.

Dr. Omer Gillett, city health officer, has returned from service in the Medical Reserve Corps.

Dr. E. Timmons, who has been in the Recuperation Hospital at Aurora for several months, has been honorably discharged and has resumed practice here.

Dr. C. E. Richmond has returned from Cincinnati, Ohio, where he attended the annual meeting of the Interstate Association of Anesthetists.

Dr. B. A. Filmer has returned here, having been honorably discharged from the army.

El Paso County was well represented at the Colorado State Medical Society meeting, about forty members from this society having attended.

Medical Societies

Do your society proceedings appear here? If not, it is your fault. Urge your secretary to send in a digest of papers read, discussions, and of his minutes, together with personal notes of interest; have them reach the editor by the first of each month, preferably earlier.

CITY AND COUNTY OF DENVER.

The regular meeting of the Medical Society of the City and County of Denver was held October 21, 1919 with vice-president Libby in the chair.

Dr. G. P. Lingenfelter presented a patient who had mycosis fungoides. The man had been under treatment for eleven years. The disease has been confused with eczema and psoriasis. It presents the appearance of flattened spots of erythema, nodes or tubercles. Some break down and ulcerate while others disappear. The x-ray causes them to disappear but they return. The treatment is mainly by use of the x-ray. Dr. W. H. Davis spoke of the unfavorable prognosis and the often extremely troublesome itching. He thought arsenic was needed in the treatment of these cases in the form of sodium cacodylate or salvarsan.

Drs. George K. Dunklee, James M. Shields and Joseph Savage were elected to membership in the Society.

The scientific program opened with a paper upon the "Immunity of Coloradans to Pulmonary Tuberculosis," by Dr. H. B. Whitney, which will be published in Colorado Medicine (See p. 268, this issue). The conclusion which he reached from this investigation was that the people in Colorado do have an immunity to pulmonary tuberculosis.

Dr. J. N. Hall opened the discussion by stating that in all his practice he had known only fourteen cases which had originated in Colorado and several of them were in the same family where the mother had contracted tuberculosis before coming to Colorado.

Dr. H. S. Canby, continuing the discussion, said that besides the statistical evidence set forth, which unquestionably proved the value of Colorado climate in pulmonary tuberculosis, he felt there was the very definite scientific and physiological effect of increased red cells and hemoglobin and an increased chest expansion, as proven by measured experiments at these altitudes. This, of course, is the reason for the good effect, known to every physician, but not sufficiently appreciated by the general public. No city is exempt from tuberculosis and the individual living under unhygienic conditions is surely in danger, but those who take proper advantage of real Colorado climate certainly develop a high resistance to the tubercle bacillus.

Dr. Philip Hillkowitz's discussion was as follows: "We are greatly indebted to Dr. Whitney for his painstaking analysis of the mortality figures of the native tuberculous. It only confirms the trite joke about the three degrees of prevaccination, statistics ranking first. His findings will remove the prop from the propaganda that has been carried on for the last decade by a number of well intentioned people to withhold the benefit of Colorado's climate from the indigent consumptives of other states. Their contention that the native population is affected by their influx will now fall to the ground and we shall be inclined henceforth to look at the immigration of

the tuberculous in a more humanitarian spirit."

The next subject was "Problems in the Facio-Maxillary Surgery of the War" by Dr. Charles A. Powers. He showed lantern slides of his own work in France. It was very interesting and showed the marvelous reconstruction in the case of soldiers who had lost much of the substance of the jaws. One of the interesting features was the bone grafting in the maxillary bones. Dr. Powers said the bone grafting was not attempted until at least six months after the injury or until all infection had entirely disappeared. It was then done under the most absolute asepsis. Dr. Powers said the experiments with bone grafting with the long bones was not so satisfactory as in the case of the maxillary bones. The pictures gave a very definite idea of the work which had been done and Dr. Powers should be congratulated upon the results which he obtained.

MARY R. STRATTON, Reporter.

EL PASO COUNTY.

The El Paso County Medical Society met in the library in the Elks Home October 15, 1919. (No meetings were held in July, August and September.)

Forty-five members were present and three visitors.

Drs. H. R. Shands and Leo Conway were elected to membership.

Dr. J. H. Brown presented a most interesting paper entitled, "Conclusions from Clinical Analysis of one hundred cases of Mitral Stenosis". Dr. Brown has recently moved to Denver where he is associated with Dr. J. N. Hall. Dr. Brown's paper was discussed by Dr. W. H. Swan, and Dr. P. A. Loomis.

Dr. Hart Goodloe of Cañon City was admitted to membership in this society by transfer from Fremont County.

C. E. RICHMOND, Secretary.

LARIMER COUNTY.

Larimer County Medical Society met in regular session in the Y. M. C. A., November 5, 1919. There were present: Drs. Kickland, Halley, Gleason, Stuver, Taylor, Brownell, Morrish, Scott, Robinson, Yates (Loveland), Howell (Berthoud), and Prof. Sackett of the Colorado Agricultural College.

A letter having been received from Dr. Crum Epler, Secretary of the State Medical Society, asking whether the Laramie County Medical Society, without expense to itself, wanted to participate in the postgraduate work being organized by the State Medical Society, it was moved, seconded and unanimously carried that we accept the invitation and take part in the work. Dr. Brownell, the President, then introduced the speaker of the evening, Dr. Philip Hillkowitz of Denver, who spoke on "Clinical and Serologic Diagnosis of Syphilis." Dr. Hillkowitz devoted nearly all his attention to the Wassermann test and after pointing out the fundamental changes on which it rests and the precautions to be taken to secure reliable results, he emphasized the importance of the test in establishing and confirming the diagnosis of syphilis. He strongly insisted, however, that the laboratory worker did not make the diagnosis but merely presented the findings and that it was the business of the clinician to decide whether the case were one of syphilis or not.

The speaker presented the subject in a very

clear and logical manner and his apt illustrations made it very interesting and it was greatly enjoyed by the whole Society. The discussion was opened by Dr. Kickland and participated in by nearly every doctor present.

No other business appearing, the meeting adjourned.

E. STUVER, Secretary.

Book Reviews

Rules for Recovery from Pulmonary Tuberculosis.

A Layman's Handbook of Treatment. By Lawson Brown, M.D. Third Edition, thoroughly revised. Lea & Febiger, Philadelphia and New York, 1919. Price, \$1.50.

The third edition of this well-known work is well worth careful perusal by both physician and layman. Although written primarily for the layman, many of the chapters could be read by the average physician with great benefit. This is especially true of the busy physician who cannot take the time to keep up with the gradual change that the last few years have brought about in the treatment of tuberculosis. The chapters on Rest, Open-Air Treatment, Diet and Exercise are particularly well written. The sentences are short and clear, put in such form that any patient of ordinary intelligence can grasp them. The book can be safely placed in the hands of any patient and will serve to counterbalance the pernicious advice that the patients always receive from ignorant laymen. In the hands of the physician, it will enable him to quickly make out his diet lists and other instructions for those patients who do not care to take the time to read the book.

A. S. T.

The Journal of Dental Research. Vol. 1, No. 3, September, 1919. A journal of stomatology, devoted to the advancement and dissemination of knowledge pertaining to the mouth and teeth, and to their relations to the body as a whole. Published quarterly by The Journal of Dental Research, Inc. (Waverly Press), Baltimore. (See editorial comment, this issue.)

The Medical Clinics of North America. Baltimore Number. Index Number. May, 1919. Published Bi-monthly by W. B. Saunders Company, Philadelphia and London. Price per year, \$10.00.

This number may well be designated as a "Johns Hopkins Number", since the greater portion of the material utilized in these clinics has as its source the Johns Hopkins Hospital. The opening clinic is presented by Dr. Lewellys F. Barker, who describes an unusually interesting case of "Funicular Myelitis". He displays a keen insight into clinical medicine in the manner in which he unfolds this case. There follows a series of most interesting and instructive clinics devoted to the gastrointestinal tract by Drs. Julius Friedenwald, Thomas R. Brown, John H. King and E. H. Gather that are commendable. A brilliant contribution on "Esophagoscopy as an Aid in the Diagnosis and Treatment of Esophageal Disease," by Dr. Elmer B. Freeman, follows.

"The Roentgenologic Signs of Joint Lesions in Children" is well presented by Dr. H. Baetjer. A lengthy but interesting discussion on diabetes, considering especially the carbo-hydrate metabolism in a scientific as well as in a practical manner by Dr. Louis Homman is worthy of attention. A valuable index to volume two is annexed to this number which maintains the excellent standard of this publication.

J. L. M.

Colorado Medicine

OWNED AND PUBLISHED BY COLORADO STATE MEDICAL SOCIETY

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Editorial Comment

THE INDIGENT MIGRATORY CONSUMPTIVE.

For several years there has been discussion among tuberculosis workers in regard to the relief and control of the indigent migratory consumptive. This discussion reached its height when California introduced in congress what is known as the Kent bill, which provided for the care of these indigent cases through government subsidies. Some sections of the Southwest, notably Colorado, vigorously opposed this bill, believing that if such subsidies were provided the Southwest would be flooded with migratory consumptives seeking to reap the benefits of the provision and that the situation would be aggravated rather than alleviated. In view of the apparent disagreement among the tuberculosis authorities in the Southwest as to the importance of the problem and as to methods of relief, the National Tuberculosis Association as an organization took no action either favoring or opposing the Kent bill. It felt it would be wise, however, to become thoroughly acquainted with the situation as it now exists in order that it might be prepared to make recommendations, should other legislative action be proposed. Consequently, about a year ago the association, at the request of the Southwestern Tuberculosis Conference, appointed a committee to investigate. The chairman of this committee is James H. Pershing, of Denver, the twelve other members being drawn for the most part from the western and southwestern states. This committee through its secretary is making an extensive survey of the conditions relating to the migratory consumptive, not only in

the Southwest but in certain industrial centers in other parts of the United States. Personal visits are being made to various communities where the problem exists, and questionnaires have been sent to tuberculosis workers, social workers, chambers of commerce, health officers, and mercantile and industrial establishments. From these questionnaires much information is being collected and studied, and it is hoped that by next spring a fairly accurate knowledge of the extent and acuteness of the problem will be in the hands of the Committee.

The National Association has been urging Congress to establish in the Public Health Service a Division of Tuberculosis which would be similar to the existing Division of Venereal Disease and operate in much the same way. The creation of such a division would be, in the opinion of the Committee, one of the most important initial steps in the solution of the migratory consumptive problem.

S. B.

SOCIOLOGY AND MEDICINE.

Two principles in the conduct of public affairs have had their importance emphasized by war and post-war conditions. One is that medicine and sociology are close of kin. The other is that economy and efficiency are promoted by a union for administrative purposes of organizations having kindred purposes.

The reconstruction needs of the war have shown that it is necessary for best results that the public health branch of sociology be coordinated with endeavors along social lines not of direct medical import, and the physician therefore is called upon today to make much more active and practical efforts than heretofore in the field of sociol-

ogy. Members of high standing in our profession have always been students, and generally they have not confined their studies to purely medical science, but have extended their interest to the broad field of general knowledge. It is natural that the problems of sociology should attract more of their attention than any others outside of medicine, since contact with families in their homes continually places before them the suffering, sense of futility of effort, squalor, ignorance and economic waste existing in many cases and the superior advantages, cleanliness, happiness and educational accomplishments present in others. These class inequalities of state and opportunity have been striking enough to engage the academic interest of physicians who had not already responded to the urge of humanitarian impulses, but today this interest must be extended and made more general, as well as practical. The main difference between the doctor's position of yesterday and that of today is that the "movement" is today calling the man, while formerly a few men were pushing the movement or confining their practical efforts to relief work in individual cases.

Embracing both the principles mentioned, the Denver Federation for Charity and Philanthropy, in a little pamphlet called "Our Community", announces itself to be "An alliance of over twenty charities, philanthropies and social organizations acting through a central office for greater efficiency and economy of operation", and continues: "Its chief aim is to serve Denver by advancing the financial, educational and social effectiveness of the cooperating organizations. The affiliated agencies carry on most of the social service work of Denver, and depend upon the contributing public for a part, or all, of their funds. . . . The Federation is purely democratic in its form of organization, in its methods of service, and in its financial support. Over three hundred directors serve on its various boards; its many activities are community wide in scope and touch practically every social problem of our city; its financial supporters number over six thousand five hundred." The Federation runs a speakers' bureau and furnishes a list of ninety-eight men and women who

can be called upon to give free lectures on subjects arranged under fifteen groups. In the list appear the names of eight Denver doctors whose lectures deal severally with the subjects of Child Welfare, Community Service, Health, Legislation, Recreation and Social Hygiene.

It is gratifying that the public is in a way calling upon our profession for talks upon some sociologic subjects which are not medical; and if the public now sees rather clearly the relationship of sociology and medicine, how blind to the needs of his calling or how careless of his standing in the community and the duties of his profession must be the doctor who neglects constructive or educational work in social matters. The Federation is taking its forward step in the coordination of heretofore separately controlled bodies whose purposes are closely allied, and the medical profession is bridging the gap between the field of physical betterment and the field of general welfare.

Current Comment

ANNUAL REGISTRATION OF PHYSICIANS.

In the November issue of Colorado Medicine Dr. J. W. Morgan made what he doubtless believed to be a reply to some remarks of mine concerning the proposed annual registration of physicians.

There are several questions involved in this plan which must be clearly answered before one can give to the proposal his assent or disapproval.

First, is there a need for an annual registration of physicians?

Secondly, is the need great enough to warrant the imposition of the inconvenience of it upon the profession?

Thirdly, should the cost of it, in equity, be borne by the licensee or by the state?

Fourthly, what will the cost of such registration be and is it planned to charge more than the bare cost of the registration?

Out of these questions Dr. Morgan offers a reply to the first only which is not, as I think, the most important part of the whole. He tells us that the State Board of Health

needs a list of physicians, such as annual registration would supply, for the purpose of disseminating circulars concerning the suppression of venereal diseases and for the accomplishment of a more nearly complete registration of births. If there were no other list of Colorado's physicians available to the State Board of Health, surely these would be weighty reasons for finding some way of furnishing one. But the Board doubtless has access to the telephone directories of the state and could easily collect from them the names and addresses of physicians. There may, indeed, be some physicians without telephones, but their influence on the high purposes of the Board of Health will be inconsiderable. The telephone directory is published quarterly. The telephone company and those who subscribe to its service unite in keeping the names and the addresses in the directory accurate and up to date. Such accuracy is essential to the business of both parties. The Colorado State Board of Medical Examiners meets quarterly, but proposes to publish an annual list of the physicians of the state. It would happen, then, that the names of those examined in January would not appear on that list for one year, those examined in April for nine months, those examined in July for six months and so on. The list would not only be defective in this respect, but redundant in that the names of those who had died or had removed would not be removed until the termination of the annual period. It is fair to assume, then, that the list culled from the telephone directories would be as accurate as that furnished by the secretary of the State Board of Medical Examiners, perhaps more so. The telephone list might cost the State Board of Health \$10 in clerk hire. That given out by the State Board of Medical Examiners would cost the physicians of the state \$4,000 per annum.

Dr. Morgan professes to think that annual registration would, in some way, exclude certain culprits now in practice whose baneful deeds darken the records of a profession which would otherwise be clean and lovely. Certainly these men registered now would be the first to renew their licenses. An honest man might safely rely upon the in-

dulgence of the State Board of Medical Examiners if negligence or forgetfulness should carry him beyond the date set for renewal of his license, but the man in disfavor with his fellows will take no chances. If there is any reason for the confident hope the doctor entertains he should have given us at least a fleeting glimpse of it. So far as I am aware the proposal was not designed for such a purpose nor had I learned that anyone had suspected that such benefits would follow its enactment. The law for dealing with malefactors in the profession is already as adequate as it can be.

I enter an earnest protest against the use of loose and unwarranted assertion in the discussion of this question. Many men will not investigate it for themselves, but will rely upon the word of others. When such are told by a public health official that the annual registration will exclude from practice those who break the moral code they may believe that there is something contained in the plan which was omitted from its description. Such is truly not the case. If it were otherwise surely the sponsors of the measure would not be long in letting us know of it. . . . CHARLES S. ELDER.

BOOKLET ON CANCER.

Dr. Chas. A. Powers, chairman of the Colorado Committee of the American Society for the Control of Cancer, states that the committee feels so strongly the advantage of having in the hands of the doctors of the state the little booklet, "What We Know About Cancer" (see Book Reviews, this issue), that it has privately secured funds which will enable it to send the publication to every member of the state society as well as others of the reputable physicians of the state.

The pamphlet is about five by eight inches in size and will arrive in your mail early in January with the Colorado committee's return card on the wrapper. It is not one of the elementary circulars gotten up for the layman, but a contribution to medical literature, intended for the medical profession, which sums up the present practical knowledge of cancer. Watch for it. Do not allow it to slip past you into the wastebasket.

THE MIGRATORY CONSUMPTIVE IN COLORADO.

Dr. Severance Burrage, Associate Sanitarian in the United States Public Health Service (Reserve), has been detailed by the Surgeon General to work with the National Tuberculosis Association as secretary of its Committee on Indigent Migratory Consumptives. Dr. Burrage has given in the editorial columns of this issue a short account of the purposes of this committee. In a subsequent issue he will discuss the problem of the indigent migratory consumptive as it affects Denver and Colorado.

MEDICAL EXTENSION WORK FOR 1920

Undertaken By

The Colorado State Medical Society.

THE PLAN

The committee to which the arrangement of this work was entrusted has decided upon the following plan:

The county societies will be served, each once a month, as indicated below.

Four lecturers will visit each locality as indicated.

Each lecture will consume about forty minutes.

The subjects to be discussed are hereinafter set forth.

Each lecturer will elect from the list.

Each county society where lectures are to be held will be charged with the responsibility of arranging for its meetings upon the dates set. It is suggested that 7 o'clock p. m. be set as the hour, as nearly as possible. In the event of a desire to materially change the hour, the State Secretary should be advised in advance. Members of county societies adjacent to those where this course is to be given are requested to attend the lectures, and all practicing physicians, whether affiliated or not, should be invited to be present.

A county society that is not included in the ten named may make application for a portion of the course to the State Secretary and he will form a team from the supplementary list if practicable.

Physicians who have indicated their willingness to teach and have not been assigned have had their names placed on the supplementary list and should hold themselves in readiness for call by the State Secretary.

SUGGESTIONS FROM WHICH LECTURERS SHALL CHOOSE THEIR SUBJECTS.

Surgery

- Fractures
- Diagnosis of perforations of abdominal viscera
- Gangrenes
- Surgical infections
- Surgery of the chest
- Surgery of the neck
- Surgery of the abdomen
- Surgery of the extremities
- Surgery of cancer

Medicine

- Empyemas
- Blood diseases
- Perforated lesions of the abdomen
- Thrombosis and embolism
- Gall bladder and passages
- Heart
- Lungs
- Infectious diseases
- Blood chemistry
- Otology, Rhinology and Laryngology**
- Accessory sinuses
- Diseases of the tonsils
- Tuberculosis and syphilis of the upper air passages
- Foreign bodies in the upper air passages
- Acute otitis media and mastoiditis
- Intracranial complications of otitis media

Neurology

- Vertigo
- Tabes and paresis (early symptomatology)
- Neuritis and neuralgia
- Neurology of head and spinal injuries
- Paralysis
- Headache
- Pain simulating surgical conditions

Dermatology

- Skin lesions of syphilis
- Parasitic affections
- Neuroses
- Diseases of the appendages
- New growths
- Atrophies

Hypertrophies**Ophthalmology**

Examination of the eye

Review of external diseases of the eye

Review of internal diseases of the eye

Iritis and glaucoma

Ocular symptoms in constitutional diseases

Relations between uveitis and general conditions

The pupil in health and disease

Refraction

Disturbance of motility of the eye

Treatment of the more common eye diseases

Strabismus

Foreign bodies of the cornea

Roentgenology

Lesions of the chest

Gall-bladder and upper abdomen

Localization of foreign bodies

Kidneys and ureters

Bone diseases

Roentgen therapy

Gastric new-growths

Colonic stasis and visceroptosis

Pathology

Serology

Laboratory prognosis

Biotherapy

Surgical pathology

The leukocyte

Genito-Urinary Diseases

Posterior urethritis; pathology; examination; treatment

Surgical prostate

New-growths of the bladder

Tuberculosis of the kidney

Cystoscopy and ureteral catheterization as an aid in diagnosis

Proper interpretation of bladder symptoms in the female

Obstetrics

The aseptic management of labor in the ordinary home; anesthesia

Delayed labor from minor contractions of the pelvis, or inefficient uterine and abdominal contractions; pituitrin vs. forceps

The management of breech, shoulder and face presentations

Prophylactic care during pregnancy

Past-partum hemorrhage; its prevention and treatment

The use of forceps; treatment of asphyxia of the newly born

Special: cause and treatment of "false labor pains"; pernicious nausea and vomiting of pregnancy; circumcision—a simplified method.

Orthopedics

Disabilities of the feet

Tuberculosis of joints

Organic and functional diseases of the spine

Differential diagnosis and treatment of anterior poliomyelitis

Pediatrics

Infant feeding

Gastrointestinal diseases

Rickets, scurvy and lues

Rheumatic triad—tonsilitis, chorea, endocarditis

Early diagnosis of contagious diseases

Obscure causes of fever in early childhood—pyelitis, otitis, nephritis, pharyngitis.

THE ROSTER.

Tuesday, January 6—

Fort Morgan: L. Freeman, J. N. Hall,
G. B. Packard, J. W. Amessee.Greeley: W. W. Grant, J. R. Arneill, R.
Levy, F. P. Gengenbach.Boulder: O. M. Shere, R. W. Arndt, F.
H. Carey, W. H. Davis.Colorado Springs: L. H. McKinnie, L.
W. Bortree, W. V. Mullin, P. Work.Cañon City: C. O. Giese, J. C. Epler, F.
Lassen, H. A. LaMoure.Trinidad: W. T. Little, H. A. Black, F.
J. Pierce, H. T. Low.LaJunta: S. W. Schaefer, J. G. Max-
well, J. J. Pattee, G. B. Webb.

Tuesday, January 13—

Denver: C. B. Lyman, W. H. Bergtold,
S. F. Jones, G. P. Lingenfelter.Pueblo: F. M. Heller, R. W. Corwin, H.
M. Thompson, C. W. Maynard.

Tuesday, January 20—

Fort Collins: F. H. McNaught, O. M.
Gilbert, O. Lyons, E. Friedman.

Tuesday, February 3—

Ft. Morgan: W. W. Grant, J. R. Arneill, R. Levy, W. W. Williams.

Greeley: F. H. McNaught, O. M. Gilbert, C. L. Pershing, S. B. Eichberg.

Boulder: C. B. Lyman, W. H. Bergtold, T. E. Carmody, S. B. Childs.

Colorado Springs: C. O. Giese, W. T. H. Baker, F. Lassen, H. A. LaMoure.

Cañon City: F. M. Heller, M. C. Shivers, H. M. Thompson, H. T. Low.

Trinidad: R. H. Finney, T. A. Stoddard, J. J. Pattee, G. B. Webb.

LaJunta: L. W. Bortree, L. H. McKinnie, W. V. Mullin, Philip Work.

Tuesday, February 10—

Denver: L. Freeman, J. N. Hall, P. Hillkowitz, C. E. Cooper.

Pueblo: W. T. Little, H. A. Black, F. J. Pierce, H. M. Thompson.

Tuesday, February 17—

Ft. Collins: O. M. Shere, R. F. Arndt, F. R. Spencer, G. E. Neuhaus.

Tuesday, March 2—

Ft. Morgan: F. H. McNaught, O. M. Gilbert, P. Hillkowitz, S. B. Childs.

Greeley: O. M. Shere, R. W. Arndt, G. B. Packard, O. S. Fowler.

Boulder: L. Freeman, J. N. Hall, T. M. Burns, A. J. Markley.

Colorado Springs: F. M. Heller, R. W. Corwin, H. M. Thompson, H. T. Low.

Cañon City: J. T. Brown, J. B. Hartwell, F. J. Pierce, C. W. Thompson.

Trinidad: L. H. McKinnie, L. W. Bortree, W. V. Mullin, Philip Work.

LaJunta: C. O. Giese, W. T. H. Baker, Fritz Lassen, H. A. LaMoure.

Tuesday, March 9—

Denver: W. W. Grant, J. R. Arneill, F. H. Carey, W. H. Davis.

Pueblo: S. W. Schaefer, J. G. Maxwell, J. J. Pattee, G. B. Webb.

Tuesday, March 16—

Ft. Collins: C. B. Lyman, W. H. Bergtold, E. Jackson, J. W. Ames.

Tuesday, April 6—

Ft. Morgan: O. M. Shere, R. W. Arndt, H. R. Stilwill, F. P. Gengenbach.

Greeley: C. B. Lyman, W. H. Bergtold, T. E. Carmody, S. B. Childs.

Boulder: W. W. Grant, J. R. Arneill, E. Jackson, G. A. Moleen.

Colorado Springs: J. T. Brown, H. A. Black, F. J. Pierce, C. W. Thompson.

Cañon City: S. W. Schaefer, T. A. Stoddard, J. J. Pattee, G. B. Webb.

Trinidad: G. O. Giese, J. C. Epler, F. Lassen, H. A. LaMoure.

LaJunta: F. M. Heller, R. W. Corwin, H. M. Thompson, C. W. Maynard.

Tuesday, April 13—

Denver: F. H. McNaught, O. M. Gilbert, E. E. McKeown, A. Minnig.

Pueblo: L. W. Bortree, L. H. McKinnie, W. V. Mullin, P. Work.

Tuesday, April 20—

Ft. Collins: L. Freeman, J. N. Hall, T. M. Burns, A. J. Markley.

Tuesday, May 4—

Ft. Morgan: C. B. Lyman, W. H. Bergtold, S. F. Jones, G. P. Lingenfelter.

Greeley: L. Freeman, J. N. Hall, O. Lyons, E. Delehanty.

Boulder: F. H. McNaught, O. M. Gilbert, E. E. McKeown, A. Minnig.

Colorado Springs: R. H. Finney, T. A. Stoddard, J. J. Pattee, G. B. Webb.

Cañon City: L. H. McKinnie, L. W. Bortree, W. V. Mullin, P. Work.

Trinidad: F. M. Heller, Wm. Singer, C. W. Maynard, H. M. Thompson.

LaJunta: W. T. Little, J. B. Hartwell, F. J. Pierce, C. W. Thompson.

Tuesday, May 11—

Denver: O. M. Shere, R. W. Arndt, J. A. Matlack, F. P. Gengenbach.

Pueblo: C. O. Giese, W. T. H. Baker, F. Lassen, H. A. LaMoure.

Tuesday, May 18—

Ft. Collins: W. W. Grant, J. R. Arneill, F. H. Carey, J. B. Davis.

"WHAT WE KNOW ABOUT CANCER."

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Original Articles

STATE PROGRAM FOR THE CONTROL OF VENEREAL DISEASE.*

S. R. McKELVEY, M.D., Denver.

1. Federal and state legislation a basis for program.

As early as February, 1916, the Colorado State Board of Health at the request of the writer promulgated a regulation requiring physicians to report all cases of venereal disease. A few physicians responded loyally, but the regulation was largely a failure by reason of the fact that the health department did not have the necessary legal and financial support to make it operative. The same movement was undertaken in some other states but with little success. Adequate legislation was seen to be essential but the molding of public sentiment was also necessary. When Congress declared that a condition of war existed between the United States and certain countries of Europe, it was found that health authorities of this country had already been making important observations in the belligerent countries on the other side of the Atlantic. It was seen that a tremendous loss of man power was due to venereal disease. Knowledge of this fact was of great value to this country and as a sequence the American army had a smaller percentage of men infected with venereal disease than any other army in the world. Army regulations met successfully the matter of venereal disease among men in the service but it was found that the source of infection in five-sixths of the cases was in civilian communities. The economic phase was thus brought to light and Congress speedily passed the Chamberlain-Kahn Act appropriating a million dollars to be apportioned among the states according to the population and used for fighting venereal disease during the biennial period ending June 30, 1920. Not more than half of this fund was to be used during the first fiscal year. After the first year each state receiving this aid has been

required to appropriate for the same purpose a sum equal to that obtained from the government. The United States Public Health Service began an active campaign in all civilian areas and very earnestly solicited the cooperation of the health department of each state. With probably three or four exceptions, all states, including Colorado, have met the requirements of the Chamberlain-Kahn Act by making appropriations. Under this arrangement the Division of Venereal Disease of our state health department was equipped with the sum of \$17,000 for use during the government fiscal year ending June 30, 1920. The General Assembly of the State of Colorado passed an act, signed by the Governor, March 19, 1919, covering most phases of the matter of venereal disease in the State of Colorado. This law established a Division of Venereal Disease in the state health department. The same law-making body also passed an act, signed by the Governor, April 9, 1919, providing that the State Board of Health shall establish a detention home for isolation and treatment of women suffering with venereal disease. The sum of \$15,000 was appropriated for the maintenance of this detention home during the biennial period. It is believed that the establishment of this home will be very helpful in the management of the problem of venereal disease in our commonwealth.

The foregoing statements constitute the basis for the entire program in the State of Colorado.

2. State program must be practically the same as national program to secure cooperation.

Early in the campaign against the spread of venereal disease the U. S. Public Health Service promulgated certain plans and regulations for operation. The plan of the government was closely followed in the enactment of a state law and the adoption of state regulations by the State Board of Health. It was necessary for the state to adopt the government plan in order that there might be successful cooperation of the state and government. Therefore, it will be seen that the program of the state is practically identical with that of the government

*Read at the annual meeting of the Colorado State Medical Society, October 7, 8, 9, 1919.

and likewise very similar to the program in most of the other states.

3. Interpretation and enforcement of the law.

As all physicians of our state are supposed to have read the recent law and regulations based thereon, it is considered important to mention here only a few special phases of the legislative act. The law provides that the State Board of Health shall promulgate necessary rules and regulations and that these shall have the full force and effect of law. Thus, the state health department is equipped with legal authority far surpassing any power ever given to it before.

Some salient features of the law and regulations are, the reporting of all venereal cases by physicians as strongly urged by the government, providing each patient with printed instructions, providing free bacteriological and serological examinations for the purpose of aiding physicians, prohibiting the sale of alleged remedies by druggists except on prescription from a licensed physician, prescribing powers and duties of local health officers, examining and treating inmates of prisons, reformatories and other institutions, prohibiting diseased persons in an infectious stage from engaging in certain occupations, providing free clinics for treatment of infected persons, and isolating carriers.

Although reporting the name of a patient is not generally required, the name must be furnished to the proper health officer for the purpose of investigation, when the patient is believed to be a menace to others by reason of habits, conditions and circumstances.

On most points the statute is very plain and the policy of the Division of Venereal Disease will be to enforce the law. In the agreement between the state and the government it is stipulated that a certain percent of the joint fund must be set aside for prosecution of those who do not comply with the law. The penalty prescribed by the statute is a fine not exceeding three hundred dollars or a jail sentence not exceeding ninety days or both such fine and imprisonment. The penalty applies to all violators whether physicians or laymen. Those in authority will find no pleasure in prosecutions but the

law must be obeyed. Physicians who loyally try to obey the law need have no fear. Those who persistently try to evade the statute should expect to suffer the penalty.

4. Cooperation of physicians essential to success of the program and not against the interests of the medical profession.

Success in this great undertaking to check the spread of venereal disease will depend very largely on the cooperation of physicians. By reason of the superior intelligence of the great body of men belonging to the most noble profession known to the world, physicians must take the lead in many great movements identified with the activities of the human race. While the great majority of our profession are deeply imbued with a spirit of genuine altruism and can have no selfish motives in this great undertaking, the fact remains that the volume of business of the profession will, for a time at least, be greatly augmented by reason of the fact that thousands of people are perhaps for the first time learning that they are infected with a dangerous disease and that services of the physician are absolutely imperative.

5. Activities, present and future.

(a) The establishment, equipment and maintenance of free clinics for the purpose of treating persons infected with venereal disease in many cities and towns of our state, constitute the largest factor in the matter of medical activity in attempting to control venereal disease. Splendid results are being realized by operation of these clinics. They reach a class of persons not of interest to the busy practitioner in a pecuniary sense. In many other respects these persons are exceedingly interesting. The student of anthropology, the scientist, the moralist, the economist, the philanthropist and the individual altruistically inclined, all find here much material for study and investigation. As physicians, you have all seen so many sad scenes on the stage of life that you will readily understand the full meaning when I say that in these clinics girls representing various ages prior to womanhood and as young as three and one-half years are being treated for vaginal gonorrhea. Very young boys also are being treated for gonorrhea in

these clinics. Syphilitic cases, of course, represent all ages from birth to advanced life. Through the Division of Venereal Disease, the state and government are furnishing free salvarsan or its equivalent and all other drugs essential for treatment of patients who attend the clinics. The free clinics, throughout the state, are all under the general supervision of the Director of the Division of Venereal Disease and each clinic is under the direct supervision of a local director who, in most instances, is a specialist in venereal disease work. Standard forms are used in keeping record of each patient. Nurses and follow-up workers are employed to assist at clinics and bring careless patients to place of treatment regularly.

(b) The educational activities are being conducted on a larger scale than generally known. Within the last few months the director in charge has had more than 150,000 pamphlets printed for free distribution among the people of our state. These pamphlets have the approval of the government and cover nearly all phases of matters pertaining to venereal disease. It has been a surprise to see how eager thousands have been to secure printed information. More than two-thirds of the above number of pamphlets have already been given away.

Large card exhibits and lantern slides are being used for enlightenment of high school boys and others of suitable age.

Moving picture films for use before audiences of men and films for use before audiences of women have been extensively used throughout the state.

Many lectures have been given throughout the state for the enlightenment of the people.

It is believed that the majority of the people now desire to hear the truth about venereal disease and their wish is being met.

DISCUSSION.

John B. Hartwell, Colorado Springs: The wisdom and necessity of the propaganda and the necessity of the control of patients suffering from venereal disease, I think, need no discussion; neither does the adequacy of the present law need comment. It depends for its success upon the cooperation of the physician, state authorities and municipal authorities, and the basis of success in the control of this class of diseases seems to be the reporting of patients infected with the disease. It seems to me a very wise provision that at the outset the patient's name should not be

reported to the board of health. In applying for slips on which to make a report the other day, I was surprised to note that there was no space on them where the physician should indicate his name. I asked the clerk at the board of health office whether or not the physician was supposed to sign the slip and he said that so far as he knew at present the physician was not supposed to do so. In other words, according to instructions which I have, and according to the slips as printed, a patient is reported by number only, by an unknown physician, and the only physician's name which may appear is that of one who may have treated the patient previously. If I am wrong in this, I should like to be corrected.

Dr. Black, Denver: That is an error in the printing.

G. A. Boyd, Colorado Springs: Mr. Chairman, I remember a paper Dr. Mayhew read before the El Paso County Medical Society some years ago, when we were trying to get our city to enact an ordinance to enforce the reporting of venereal diseases, in which he stated that the diseases were entrenched in the hills of shame and therefore very difficult to bring into public light. We will not get proper control of venereal disease until we make it subject to the same laws as are diphtheria and scarlet fever. Whenever society is ready to stand for a law that requires the reporting of the individual's name and such isolation and treatment as prevents the spread of the disease from that patient and cures him, we can control venereal disease as completely as we have diphtheria. It is our part to educate the public to a point where they will demand enactment and enforcement of such a law. With our present knowledge, we know that the control of the disease is easily within our grasp and professional indifference to this fact becomes our shame.

H. T. Low, Pueblo: As director of the clinic at Pueblo, I wish to take up a different angle of the venereal disease situation. From Dr. McKelvey's paper, it would seem that everything is lovely in the clinic proposition, but I assure you we have a hard fight there in order to get the finances to back it and run it in a scientific manner. Dr. Boyd has struck the ideal way of handling this proposition, and until such time as the medical profession of this state takes an interest in educating the general public, in about such a way as the army officer preached to the recruit and to the soldier, we shall not attain that ideal plan Dr. Boyd spoke about. It is up to the medical profession, individually, to get after this proposition and push it. As it has been said, at the present time it is probably on a war basis; but we all recognize that from a civil standpoint there is just as much a loss of efficiency from the ravages of venereal disease—and perhaps more, if we could classify it, which we have not been able to do yet. Perhaps we shall be able to do this in the future, when we have these great statistics which my friend, Dr. Spivak, spoke about awhile ago. I think that the members of the society should boost this proposition, should boost the establishment of clinics, should help in raising funds to keep the clinics going and on their feet, should refer proper cases to the clinics and should not hesitate to use the state bacteriological aid to make a proper diagnosis.

Minnie C. T. Love, Denver: I want to say that I think we should not be overwhelmed by the idea that if we try to take care of these women we never can do it because of their numbers. We must remember that these detention homes are not intended to take care of bed cases, but only of women who are in the active stages of disease—

that is, in the communicable stage of any of the venereal diseases; and the detention home is intended to be a place where they can report periodically for treatment, and where we can give them the scientific treatment that we really cannot give in the clinics, because we only see them once a day, or once every other day. Now, I feel we should have this detention home for women as the place for all venereal disease work that we expect to do in the state. We believe that until we have a place to put the women it is useless to do very much with them. We can do a little in the clinics, but I think, as a medical profession, we should express our indignation at the conduct of our city authorities who are arresting women and fining them and turning them back on the streets simply as a method or means of getting revenue. I think this venereal disease question is something that should strike vitally into the life of every physician, because there is not one of us that doesn't find, if he uses this public bacteriological department, that his efforts in certain lines have been arrested for years because he has been treating cases of hidden syphilis for neurasthenia and all sorts of things. Your washerwoman will tell you that a few doses of salvarsan will fix you all right. Dr. McKelvey didn't have time to tell you that he has made investigations in the penitentiary and finds that forty-five percent of the men in the penitentiary give positive Wassermanns; fifty-two percent of the people in the state insane asylum give positive Wassermanns. It is a big question, gentlemen, and we cannot stand out because of a mere quibble about whether a patient gives his right name or wrong name. I don't care what names they give. I can give the city hall any names they give me, but I want to treat those patients, I want to get their confidence, and I want them to come to me every day at the clinic or my office for treatment, so as to protect the public.

Clinton G. Hickey, Denver: I don't want to speak of anything which has not already been mentioned, but I want to emphasize two or three things, and first is the matter of reporting the case. It is true that there is a difference between the regulations of the city—that is, of Denver—and of the state in this respect; but I want to say to those who are not familiar with the facts that from outside of the city, all over the state, an increasing number of men are reporting their cases. During the last sixty days a very remarkable change has been noticed in this respect, and to me this is a matter of great encouragement, because it shows me that the medical men of the state are not simply wanting to conform with the law, but are awake to the importance of doing just what the law requires, because the law is based upon ordinary good sense, as it appears to most of us. It is hoped, too, that some arrangement may be had with the City of Denver Department of Health so that there will not be the same objection, which now is known to exist, on the part of the genitourinary men, particularly in this city, to reporting their cases. There has been a good deal of criticism of men doing genitourinary work because they have been so averse to reporting the names of their patients, but if such an adjustment can be made it will largely do away with that condition, so that men will be quite willing, I am sure, to report their cases, simply by case number, as is done outside of the city. The State Board of Health having authority, where any suspicious circumstance is attached to a case, we can go to the physician who has that case in charge and require of him or ask of him the name

and address and such other information as may be necessary properly to protect the public.

Now, about the detention home. I believe, as Dr. Love has already stated, that this is a very important matter. The amount of money which was appropriated by the last legislature, of course, is only sufficient to make a beginning, but it is sufficient to permit the State Board of Health, once it can get started in this work, to make a demonstration of what can be done. And remember, cases need not be kept there continuously; what I mean is this, the capacity of a place which may be opened is not the measure of service which it can render, but as these cases lose their power of being infectious, then they give way to others, and arrangements can be made, as has been intimated, for home visits for the treatment of those who still need service. In regard to clinics, to my mind they are an exceedingly important thing, and I am glad of the stress which Dr. Low of Pueblo has laid upon this matter, and it seems to me it is up to the physicians, when they think this matter over and appreciate the importance of the situation, to use their personal influence with their own city councils and their own boards of county commissioners to get them to do what has already been done by several boards, and that is to include in their budget for the coming season a sufficient sum to make it possible to conduct these clinics as they ought to be conducted. It is not to be expected that men can give a large amount of service gratuitously; they are getting nothing out of it; they are simply rendering public service of a high character, it seems to me, and so it is right for the public to render to them some moderate compensation for the service they are giving; and in this way physicians can be of great assistance, because they carry a great deal of weight with the men of their city councils and the members of their boards of county commissioners, and they can use their influence with these men to get them to provide such funds as are really going to be needed to make the clinics a success.

Dr. McKelvey (closing): I will not detain you very long. Dr. Hartwell referred to report blanks not requiring the name of the physician reporting the case. There was an error made in the printing. When the error was discovered the correction was made at once. It is very important to have the name of the physician in charge of each case. I cannot account for the incorrect information obtained from some clerk. The clerk in my office understands these matters.

Dr. Low has called your attention to the difficulties encountered in raising funds for maintenance of a free clinic in Pueblo. He is absolutely correct, but we are still working on that matter and are hopeful of success. While we have found this to be a difficult matter in Pueblo, the necessary funds for maintenance in several smaller cities have been raised very easily. The amount thus raised for support of free clinics already exceeds the combined amount provided by the state and government for combating venereal disease in Colorado. The joint fund of the state and government is only sufficient to equip and establish clinics. When established they must receive financial support from the cities.

The importance of emphasizing the matter of a detention home for the care and treatment of women suffering with venereal disease cannot be over-estimated. This is a very important matter and I regret very much that by reason of numerous obstacles the home for which provision was made by the last legislature has not been estab-

lished. I hope this home will be open in a short time.

I want to insist upon physicians observing the printed regulations which cover the whole matter of venereal disease control in this state. Sometimes physicians make complaint when the fault is entirely their own. Sometimes I receive from physicians samples of blood and smears for free examination unaccompanied by any data or name of any physician. Sometimes the mailing tubes are mailed without having the samples placed in them. In these cases I can never report, as the name of the sender is unknown. When these matters are better understood, errors will not occur so frequently.

Venereal Disease; Plans of the Public Health Service.

When the Chamberlain-Kahn Act created the Division of Venereal Diseases in the United States Public Health Service and the work of venereal disease control was inaugurated, the plan of procedure formulated was grouped under three headings, as follows:

1. Medical measures.
2. Law-Enforcement measures.
3. Educational measures.

The Educational measures include the dissemination of information by leaflets, lectures, exhibits, moving pictures, stereopticon views, and other means, among industrial plants, commercial institutions, clubs, libraries, community centers, schools, churches, the home, and every walk of life.

The Law-Enforcement measures include encouragement of the closing of restricted districts; stimulating enforcement by state and municipal officials of laws and ordinances directed against prostitution in all its phases, the establishment and management of institutions for the rehabilitation of venereally infected persons, and the commitment to institutions of venereally infected feeble-minded persons; urging the adoption and enforcement of laws and ordinances compelling the reporting of the venereal diseases, the prohibiting of quack advertising, and the sale of venereal disease nostrums; and other measures designed to prevent the spread of the venereal diseases.

The Medical measures include the establishing of clinics; securing hospital facilities for venereally infected persons; making available laboratory facilities for the scientific diagnosis of venereal diseases; securing wide distribution of arsphenamine or similar products; obtaining the support of the entire medical profession by the reporting of their cases to the State Board of Health and the treating of venereally infected persons, in accordance with the best modern methods; securing the cooperation of druggists in refusing to dispense venereal nostrums and directing prospective purchasers of such remedies to venereal disease clinics, or reputable physicians; securing the cooperation of dentists and nurses in their respective fields of practice; and enlisting the interest and services of all medical, dental, and pharmaceutical schools, societies, and journals.

Under Medical measures, the campaign was begun with the advertising media of the country. The 20,000 newspapers and magazines carrying advertising were appealed to for cooperation, with the result that up to the present, according to agreement cards received, and clippings made, approximately 140 only, or less than one per cent. are still carrying obnoxious advertising. In other words, more than 99 per cent of the newspapers

and magazines in the United States carrying advertising are cooperating.

The next step in the campaign was directed to the druggists of the country. Out of the 48,500 appealed to, results up to the present, by return agreement card, show the cooperation of approximately 28,000, or nearly 60 per cent.

After the druggists the 131,780 legally recognized physicians in the United States were appealed to, with the result that agreement cards of cooperation have been received up to the present time, from approximately 60,000, or nearly 50 per cent.

The campaign with the dental profession is just being launched; the campaign with the nursing profession and the training schools for nurses, is under way.

The campaign with the professional schools, hospitals, medical, dental, and pharmaceutical societies and associations,—national, interstate, state, county, and municipal,—has just been begun by a letter addressed to the deans of the medical and allied colleges of the country.

ORGANOTHERAPY.*

H. W. HAZLETT, Paonia.

The self-preservation of man and kindred animals is effected through mechanisms which transform latent energy into kinetic energy to accomplish adaptive ends. Man appropriates from environment the energy he requires in the form of crude food, which is refined by the digestive system. Oxygen is taken into the blood and carbon dioxide is taken from it by the respiratory system; to and from the myriads of working cells of the body, food, oxygen and waste are carried by the circulatory system; the body is cleared of waste by the urinary system; procreation is accomplished through the genital system; but none of these systems is evolved primarily for the purpose of transforming potential energy into kinetic energy for specific ends.

Each system transforms such amounts of potential energy into kinetic energy as are required to perform its specific work, but it does not transform latent into kinetic energy for the purpose of escaping, fighting, pursuing, nor of combating infection. The stomach, the kidneys, the lungs, the heart, strike no physical blow; their rôle is to do certain work to the end that the blow may be struck by another system evolved for that purpose.

The kinetic system does not directly cir-

*Read before the Delta County Medical Society, September 26, 1919.

culate the blood, nor does it perform the functions of digestion, urinary elimination, procreation; but, though the kinetic system does not directly perform these functions, yet it does play indirectly an important rôle in each, just as the kinetic system itself is aided indirectly by all other systems. Among the organs in the kinetic system are the brain, the thyroid, the adrenals, the liver, the pancreas, and the muscles. The brain is the great central battery which drives the body; the thyroid governs the conditions favoring tissue oxidation; the adrenals govern immediate oxidation processes; and the muscles are the great converters of latent energy into motion and heat. Adrenalin alone, and thyroid extract alone, and brain activity alone are capable of causing the body temperature to rise above normal. The functional or secretory activity of no other gland in the body can cause a comparable rise in body temperature. No active principle derived from the kidneys, liver, stomach, spleen, pancreas, hypophysis, parathyroid, intestines, thymus, lymphatic glands or bones can per se cause a rise in temperature comparable to the rise that may be caused by the activity of the brain, or muscles, or by the injection of adrenalin or thyroid extract. Then, too, when the brain, thyroid, adrenals, or muscles are eliminated the power of the body to convert latent into kinetic energy is impaired or lost. I shall offer evidence tending to show that an excess of either internal or external environmental stimuli may modify one or more organs of the kinetic chain, and that this modification may cause certain diseases.

For example: Alterations in the efficiency of the cerebral link yield neurasthenia, mania, dementia; of the thyroid link, Addison's disease and cardio-vascular diseases. There seems to be no ground for disputing the breadth of what has been termed the "Hormone Theory". By the term "hormone" we understand any substance normally produced in the cells of some part of the body and carried by the blood stream to distant parts, which it affects for the good of the organism as a whole. The hormones are thus the chemical means of cor-

relation of the activities of the different parts of the body.

Harrower arranges a practical outline in which the hormones may render therapeutic service: (1) Substitution therapy; by supplying missing hormones, the loss of which is known to be due to destructive lesions or congenital absence of an organ. For example, as in hypo-thyroidism, where thyroid treatment actually replaces a secretion. (2) Supplementary therapy; by augmenting directly or reflexly a presumed deficiency, due either to an increased physiological demand or to a decreased hormone output. This includes both the hormone and the chalone action, as exemplified respectively by the luteal treatment of amenorrhea and the pancreas treatment of glycosuria. (3) Specific physiological therapy; by producing a definite physiological influence which is indicated, but not because of any change in the normal hormone-production of the patient, as in the use of pituitrin for stimulating uterine contractions during labor, or of the angiotonic and styptic action of adrenalin. (4) Empirical application; a strictly unscientific but nevertheless sufficiently important phase of hormone therapy which produces results in a manner which is clinically evident but more or less unexplainable from the strictly scientific basis, as in the pituitary treatment of functional ovarian disorders, the parathyroid treatment of paralysis agitans, the thyroid treatment of rheumatic arthritis, or the pluriglandular treatment of "run-down conditions".

Thyroid therapy is the best known application of hormone-bearing products in therapeutics, and its value in certain conditions makes it possible to class it with that limited number of remedies known as "specifics". The thyroid is the "keystone of the endocrinous system". It discharges into the blood and lymph a secretion which contains the active principle or hormone. This substance influences certain tissues directly, and by its profound action upon the metabolism indirectly affects many functions of various organs, thus tending to prove Murray's theory that the thyroid secretion is polyvalent and contains different hormones which are capable of activating different or-

gans. The absence or diminution of one or more of these substances may explain the simultaneous occurrence of thyroid weakness and thyroid hypersecretion.

While a number of the ductless glands are intimately concerned in the regulation and maintenance of nutrition, none of them plays such a decided part as the thyroid. It may be said that the thyroid presides over the nutrition of the body, although, of course, its influence is augmented from many other quarters. The extraordinarily stunted condition of cretins, the prevalence of disordered fat metabolism in patients suffering from only slight thyroid insufficiencies, the relation of thyroid disease to bone growth, and, finally, its intimate connection with the establishment of the sexual activities and the accompanying mental and physical growth, are incontestible evidence of the essential influence of the gland on metabolism and nutrition. The interrelation of the thyroid and its endocrinous fellows is well known. It is in proved relations with the adrenals, pancreas, hypophysis and gonads, and very probably is quite intimately connected with the thymus, parathyroids and intestine. There is nothing speculative in the greater part of the information which we now have at our command, and the thyroid should be taken into consideration in the study of practically every phase of internal medicine.

In cretinism the administration of thyroid for a short time shows a marked improvement. The coarse, brittle hair falls out, the rough skin exfoliates in large patches, the resiliency of the flesh returns, and the mental improvement is remarkable. The dose should be small in the beginning and be increased until the patient develops the typical signs of excess of thyroid, when the dose is reduced to a point where the patient is comfortable and the benefit continues. Simple nontoxic goitre responds at once to thyroid medication, but such treatment is contraindicated in all forms of toxic goitre.

Epilepsy has been greatly improved by thyroid therapy, the paroxysms becoming less in number and severity. In chronic rheumatism it is indicated, as it is in sensi-

tiveness to cold, loss of hair and teeth, neurasthenia, incontinence of urine, obesity, and in pluriglandular combinations.

The parathyroids exert a marked antagonistic action on certain metabolic toxins. The action of these extracts coincides with the physiologic activities of these glands, and they have been successfully employed in the treatment of such diseases as tetany, paralysis agitans, hyperthyroidism, eclampsia and chorea.

The thymus gland seems to influence calcium metabolism and growth. The belief is quite general that the thymus is concerned in the retention of calcium salts by the body, and particularly, that it has an influence on the ossification of bones. The therapeutic indications, then, would be in malnutrition and delayed growth.

From the time of discovery of the apparently insignificant gland at the base of the brain, later called the pituitary gland, because of its supposed direct connection with the nose and power to produce pituita, or mucus, this organ has been a source of considerable speculation. There still remains an element of mystery in this wonderful gland. When the story is told to the novice that not only will a certain remedy hasten labor in the startling manner to which most of the profession have now become accustomed, but will prevent post-partum hemorrhage and uterine subinvolution, stimulate galacto-genesis and, occasionally, abort a mammary abscess; increase heart action and raise blood pressure, thus exerting marked benefit in shock or collapse; produce copious diuresis and act as a remarkably efficient enteric stimulant, especially in post-operative paresis, the statement is accepted with a great many reservations.

In obstetrics it has given us remarkable results, and when used with judgment is the most valuable aid in labor we have at our command. In cases of uterine inertia, with a flabby pendulous abdomen in women who are bearing children too frequently and show a general lack of tone, a single dose ends the labor in a short time. Some of these cases give a history of being in labor two or three days and a certain number of these demanded forceps delivery. All are weak

and exhausted after delivery. Following the administration of pituitrin the patient will herself speak of feeling much stronger and more comfortable, the uterus will remain well contracted, and there will be an absence of the large clots so common in these cases.

We read of some bad results from pituitrin in obstetrics and no doubt they do occur. My own experience with pituitrin dates from its first appearance in obstetric practice and I have yet to experience any of the bad effects so often reported. I feel that in pituitrin I have a means of helping the woman in labor who needs its aid, and that there is nothing to equal it in its certainty and safety of action.

I have used it in primiparae with splendid results when the patient had been in pain for hours without uterine contractions strong enough to cause dilatation. Five or six minims will do the work and are enough. Keep close watch for too strong contractions and give a few whiffs of chloroform, which regulates the pains, so that the periods of rest and uterine contractions approach normal.

The contraindications are well known, and after all its use rests with the one who is to use it. If the passage is too small for the passenger, if the head is not moulded sufficiently, if the os is rigid and unyielding, it should not be given.

Another extremely useful application of pituitary extract is of special interest to surgeons. It may be used to relieve post-operative symptoms, such as meteorism and distention. The rapid and irregular pulse which not infrequently accompanies these symptoms is also favorably modified.

Bidwell tried the enterokinetic effect of pituitrin in twenty-one laparotomy cases. In three the bowels acted without an enema and in all but two of the others a simple enema sufficed to bring about a satisfactory action without internal medication. All passed flatus freely a few hours after the injection, and were free from abdominal pain and distention. The pulse rate was much lower than usual and even after the severest operations did not exceed eighty per minute.

Pituitrin has a decided diuretic effect under normal conditions. In diabetes insipidus

it controls the output. Francesco of Venice gives a valuable review of the relation of polyuria to pituitary disorders. He reports in detail with charts on two cases of diabetes insipidus which were controlled by injections of pituitrin. The average quantity of urine in both cases varied from 6,000 to 8,000 c. c. and when in control from 1,000 c. c. to 2,000 c. c. daily.

The value of preparations of the adrenal glands is well known, and they are in general use today. At first used for their styp-tic or pressor value, their range has widened to many forms of usefulness. Among these are:

(1) Adrenal insufficiency, or hypoadrenia, in which there is a definite pathologic lack of the chromaffin hormone, as in Addison's disease, certain acute infectious diseases, during which a hypoadrenia develops (e. g., diphtheria, cholera, scarlet fever, typhoid fever) and certain nutritional disorders, especially osteomalacia and rickets.

(2) Those conditions in which the vaso-constrictive, myotonic, or diuretic properties of adrenalin are available.

Adrenal insufficiency may be suspected in an infectious disease when agitation, excitement, and fever give place abruptly to prostration, lower temperature, and arterial hypotension and a tendency to collapse. These symptoms attain their maximum in typhoid, even simulating peritonitis or internal hemorrhage and disappear rapidly under administration of adrenalin.

Sergent obtains very happy results by using adrenalin in the asthenia of tuberculosis, but immediately stops it if hemorrhage occurs. Wedensky mentions a series of twenty cases of pleurisy in which he used intrapleurally epinephrin hydrochloride with such favorable results that he discarded all other methods of treating this condition, except by surgical intervention where indicated.

In urticaria an injection of adrenalin will be followed by improvement and the disappearance of all itching in from five to twenty minutes.

The vaso-constricting action of adrenalin

(Continued on page 301).

ORGANOTHERAPY.

(Continued from page 296).

has made it a useful means of controlling the paroxysms of bronchial asthma. It is best given hypodermically in $\frac{1}{2}$ -c. c. doses. It has no cumulative action, nor does the system become accustomed to the drug. Meulengracht gave no less than one thousand five hundred such injections to one patient in nine months.

Loeper recommends its use in the collapse following the administration of antityphoid serum. Among soldiers who acquire during trench life a lowered resistance and when vaccinated show signs of collapse with adrenal insufficiency supervening, he recommends the following procedure to obviate these disconcerting experiences: (1) Take the blood pressure as often as possible before vaccination. (2) Do not inoculate tired and worn-out individuals until they have had a good rest. (3) Give cases with lowered tension a preliminary dose of adrenalin before vaccination. (4) Watch the post-vaccinal tension in suspicious cases and give more adrenalin in those with secondary hypotension.

Beeson recommends adrenalin ten minutes before administering salvarsan. The patient becomes quite pale if the drug is exerting its effect, and this "leuco-reaction" as it is called is an index of the efficiency of the adrenalin in the case under treatment. He calls attention to the fact that flushing of the face during injection of salvarsan is an indication for stopping the procedure at once and administering adrenalin.

Ovarian therapy holds first place in the climacteric where the readjustment in nervous and mental derangement is often a serious matter. The sympathetic neuroses, such as palpitation, flushing, insomnia and amnesia, are often promptly relieved. The nausea and vomiting of pregnancy is relieved and often cured. Sexual anesthesia is a decided indication for its administration. Persistent use is necessary in some cases, but all are benefited. Dysmenorrhea having a supersensitive nervous system as a basic factor is greatly benefited.

Cuthbertson recommends corpus luteum in the following conditions: (1) Young girls

underdeveloped physically, in whom the menstrual function is established but is irregular or scant. (2) Women of all ages, prior to the menopause, whose menstrual function had been fully and naturally established but on account of high living and sedentary life had become irregular, with marked periods of amenorrhea. (3) A large class of women menstruating irregularly and presenting a decided hysterical temperament, with little benefit from the usual treatment. In scanty lactation excellent success has followed the use of corpus luteum from pregnant young cows.

Secretin is a definite chemical product of the mucous membrane of the duodenum, the principal alimentary hormone. Bayless and Starling of London first isolated secretin and proved it to be one of the most important discoveries in physiological research, for it firmly established the position of the "chemical messengers". It is the most powerful excitant of gastrointestinal secretion so far tried. It is useful in flatulence and diarrhea, especially in children, gastrointestinal insufficiencies, diabetes mellitus and in postoperative cases, such as gastroenterostomy and intestinal short circuiting. Mucous colitis is another condition that should be benefited by its use.

In the blood there are countless substances of the nature of hormones related to one another and performing innumerable functions. We have but to think of such phenomena as the production of digestive fluids, the regulation of the nervous system, the change from puberty to manhood or womanhood, the menopause, the gradual onset of senility, and many other well-known phenomena, to understand why the blood should carry within it countless "chemical messengers", each with a specific object. The fundamental principle of hormone therapeutics, and certainly a most reasonable one, is to supply to the body a certain hormone or combination of hormones which through disease has been diminished or lost.

The references are very incomplete. I am grateful indeed to Dr. Harrower of Los Angeles for sending me valuable data, and our Medical Library in Denver, for furnishing a volume of endocrinology, which was a great help.

CHOLESTEATOMA INVOLVING ORBIT.***Report of a Very Large Cholesteatoma of Nasal Accessory Sinus Origin With Extension Into Orbit.****F. R. SPENCER, M.D., and C. L. LaRUE, M.D.,
Boulder.**

Mr. A., whose present age is forty-three, first presented himself for examination February 9th, 1916. At that time there was extreme exophthalmos of the right eye and the eyeball was much lower than the left, in fact, it could be seen to be resting on the cheek. Vision: right eye, 5-200 and Jaeger No. 14; left eye, 15-20 minus 1, and Jaeger No. 1.

The patient gave a history of injury to the right eye twenty years previously, of more or less doubtful value. As there was slight pulsation with many varicose vessels, a diagnosis of probable pulsating exophthalmos was made. X-ray examination, nasal examination, blood Wassermann, etc., to be followed by an exploratory operation, were all advised and refused.

The patient was not seen again professionally until June 30, 1919, at which time the exophthalmos had increased; there was rather severe constant pain in the right orbital region, which was steadily increasing; there was keratitis, due to exposure, at the lower corneal margin; all of the media were hazy; the nerve head was pale; transillumination of the eyeball was negative; vision, right eye, was only 2-60 (metric); there was marked edema of the upper lids with more varicose veins at the outer canthus; and x-ray examination showed that the frontal, ethmoidal and maxillary sinuses, as well as the orbit, on the right were all cloudy. The general physical examination was negative.

An osteoma seemed the most likely tumor because of its slow growth, although sarcoma was a possibility. Many other tumors such as fibroma, carcinoma, etc., were thought of, but seemed less probable.

On July 14th, 1919, an exploratory operation was performed by a modified Kroenlein

method. As the incision was completed a milky fluid came out. When the wound was opened a cholesteatoma approximately 7x5 cm. in size was removed from the orbit and frontal sinus, the floor of the latter being absent. Healing has been slow, but uneventful with only slight exophthalmos remaining. Vision, right eye, was 1-60 on September 30th, 1919.

A brief review of the literature shows that "about the year 1840, J. Muller¹ described new formations in the temporal bone, resembling pearly growths. They were composed of concentric layers of epidermoid cells with cholesterol crystals between them."

Cholesteatomatous or caseous rhinitis was first described by Duploy and Follin² in 1874. "This rare disease seems to be more the result of some associated condition than a process actually involving the nasal mucosa. In the few cases reported, each shows different etiological factors. There is an accumulation in the nasal fossa of a cheesy, gelatinous material, often to the extent of actual displacement of structures and facial deformity. There is associated with it an extremely fetid odor, fouler, if possible, than that occurring in ozena. No special microorganisms are found except those of decomposition. Microscopically, the material shows fatty cells, granular leukocytes, stearin, and cholesterol crystals. The condition occurs in individuals with tubercular tendency, or in those who possibly have been infected with syphilis. In one case reported, the cause was believed to have been a myxomatous growth which had undergone degeneration."

Heimendinger³ states that "cholesteatoma formation may be due to two independent causes: 1. The disturbance in evolution during embryonic life (true cholesteatoma); 2. Encroachment of the epithelium from without into the sinus cavity (false cholesteatoma). The true cholesteatoma exists from birth and is probably a factor in the causation of the subsequent empyema. The false cholesteatoma is always dependent upon, and the product of, the existing sinus sup-puration."

We believe we are dealing with a sec-

*Patient presented at the annual meeting of the Colorado State Medical Society, October 7, 8, 9, 1919.

ondary cholesteatoma in this case and that a more extensive operation will likely be required later.

Bibliography.

1. Ballenger: Fourth Edition, 1914, p. 761.
2. Kyle: Fifth Edition, 1915, p. 86.
3. Heimendinger: Beitrage zur Path. Anatomie der Kieferhohle.

MINUTES OF THE FORTY-NINTH ANNUAL SESSION OF THE COLORADO STATE MEDICAL SOCIETY, HELD AT DENVER, COLORADO, OCTOBER 7, 8 AND 9, 1919.

October 7—First Day—Morning Session.

The Society met in the Auditorium of the Medical Society of the City and County of Denver at 10 o'clock a. m., and was called to order by the President, Dr. F. H. McNaught.

Dr. William H. Crisp, Denver, read a paper entitled "The Treatment of Corneal Conditions by the General Practitioner," which was discussed by Drs. H. A. Smith, Libby, Jackson, Orendorff, Tremaine, Ringle, Kennelley, and, in closing, by the essayist.

Dr. George F. Libby, Denver, presented a paper on "Double Optic Neuritis Associated with Dental and Nasal Focal Infection," which was discussed by Drs. Gallaher and Warner and by the essayist in closing.

Dr. J. J. Pattee, Pueblo, read a paper on "Misleading Conditions in Acute Suppurative Otitis Media," which was discussed by Drs. Bane, Ringle, Gallaher, Stephenson, Baum, Singer and, in closing, by the essayist.

Dr. Otis Orendorff, Cañon City, contributed a paper entitled "Is a Medical Degree Essential for the Accurate Fitting of Glasses," which was discussed by Drs. Pattee, Ringle, Crisp, Jackson and, in closing, by the essayist.

Dr. George H. Cattermole, Boulder, read a paper entitled "Tuberculosis in the Army," which was discussed by Drs. Simon, Marshack, Burnett and Taussig.

First Day—Afternoon Session.

The Society reconvened at 2 o'clock p. m., and the President then read his annual address, which will be published in full in Colorado Medicine.*

On motion made, seconded and carried, the address of the President was referred to the Committee on Reports of Officers.

Dr. C. T. Burnett, Denver, read a paper on "Anti-Tuberculosis Activities in France". No discussion of this paper was had, Dr. G. B. Webb, assigned to open the discussion, not being in attendance.

Dr. L. J. Weldon, Denver, presented a paper on "Hernias in Children", which was discussed by Dr. W. A. Kickland.

Dr. W. W. Grant, Denver, presented a paper on "The Relation of Hernia to Military Service", which was discussed by Drs. Epler, Jayne, and the essayist in closing.

Dr. S. D. VanMeter, Denver, contributed a paper on "Hereditary Appendicitis", which was discussed by Drs. Singer, Boyd, Stoddard and Dr. VanMeter in closing.

Dr. S. Fosdick Jones, Denver, read a paper on "Fracture of the Tibial Spine", which was dis-

cussed by Drs. Baker and Childs, and the essayist in closing.

Drs. H. G. Wetherill, Denver, and Cuthbert Powell, Denver, presented a paper on "The Management of Delayed Union and Ununited Fractures", read by Dr. Powell. The paper was then discussed by Drs. Grant, Lyman, Hegner, Miel and, in closing, by the essayist.

October 8—Second Day—Morning Session.

The Society met pursuant to adjournment at 9 o'clock a. m., and was called to order by the President.

Mr. H. E. Dingley then read a paper on "Workings and Improvements of the Harrison Anti-Narcotic Law", which was discussed by Drs. Neuhaus, Moleen, Magruder, Work, Gilbert, Henderson and, in closing, by Mr. Dingley.

The Chairman of the Committee on Necrology then presented a report, which, by vote of the Society, was ordered accepted and published in Colorado Medicine.

The report is as follows:

REPORT OF THE COMMITTEE ON NECROLOGY.

Fifteen members of the Colorado State Medical Society have died since the meeting of 1918.

Dr. Boswell P. Anderson was born in 1847. He received the degree of Doctor of Medicine from the University of Virginia in 1868 and from the Washington University School of Medicine in Baltimore in 1869. He began practice in Colorado Springs in 1872, where he held a prominent place until his death, which occurred August 24, 1919. He was one of the founders of Glockner Sanitarium and later of St. Francis Hospital.

Dr. N. G. Burnham died at his home in Denver at the ripe age of ninety years. He was graduated from the Eclectic Medical College of Cincinnati in 1852 and from the Cleveland University of Medicine and Surgery in 1855. He was one of the earliest practitioners of Denver. He maintained an enthusiastic devotion to his patients and to the interests of his profession until the end.

Dr. Horace Robert Burns of Denver was born in 1869 and was graduated from the Gross Medical College in 1896. He specialized in ophthalmology, otology, laryngology and rhinology. He died October 18, 1918.

Dr. William Heney Campbell of Pueblo was born in 1868 and was graduated from Rush Medical College in 1897. He began practice in Colorado in 1898. His death occurred September 18, 1919.

Dr. W. J. Churchill of Longmont was born in 1876 and was graduated from the Medico-Chirurgical College of Philadelphia in 1905. He was a member of the Medical Society of Pennsylvania and was not in practice for some time before his death.

Dr. William N. DeArmond died at Fort Collins. He was born in 1864 and received his medical degree from Keokuk Medical College, Iowa, in 1902, beginning practice in Colorado in 1907.

Dr. Frank Finney of La Junta, a former president of this Society, died of angina pectoris March 23, 1919. He was born in 1858 and received medical degrees from Georgetown University in 1882 and from Bellevue Hospital Medical College in 1885. He was chief surgeon of the Western Division of the A. T. & S. F. Ry. Hospital Association from 1889 until his death. He is mourned not only as an eminent physician, but as a citizen who filled many offices and honored all of them.

Dr. Benjamin F. Griffith of Leadville died August 13, 1919. He was born in 1865 and was grad-

*Editor's Note: The presidential address of Dr. McNaught appeared in the October, 1919, issue of Colorado Medicine.

uated from Gross Medical College in 1889, beginning practice the same year.

Dr. Erlo E. Kennedy was born in 1880 and graduated from the Baltimore Medical College in 1905. He began practice in Colorado at Basalt in 1908, later coming to Denver as Secretary of the State Board of Health. His death, February 4, 1919, was from pneumonia complicating influenza.

Dr. Herman H. Martin of Denver died in Los Angeles August 26, 1919, at the age of fifty-six. He received his medical degree at the Medical College of Indiana, Indianapolis, in 1884. In 1887 he began work in Denver, where he soon had a large practice in medicine and surgery.

Dr. George R. Pogue of Greeley died in July, 1919. He was born in 1861 and was graduated from the Detroit College of Medicine and Surgery in 1892. In 1899 he began practice in Colorado, specializing in tuberculosis.

Dr. Arthur R. Pollock of Monte Vista died of influenza, February 3, 1919. He was graduated from the Washington University Medical School, St. Louis, in 1898. He began practice in Colorado in 1902, giving special attention to surgery.

Dr. J. Smits of Leadville was born in 1869 and was graduated from the University of Paris, France, in 1904. He began his practice in Colorado in 1907.

Dr. James R. Stewart of Colorado Springs died of influenza December 6, 1918. He was born in 1882 and was a graduate of the Johns Hopkins Medical School, class of 1909. He had practiced in Colorado since 1912, specializing in tuberculosis.

Dr. John E. Wilson of Denver was born in 1879. He was a graduate of the Harvard Medical School, class of 1905, and came to Colorado in 1911. He was not in practice all of the time before his death.

These meager facts of birth, education, work and death are but a poor memorial of our departed comrades, but their real obituaries will remain in the minds and hearts of their families, patients and friends.

HOWELL T. PERSHING.
MELVILLE BLACK.
O. M. GILBERT.

Dr. D. A. Strickler, Denver, read a paper on "Annual Registration of Physicians", which was discussed by Drs. Magruder, Morgan, Elder, Crisp, Spivak, Spencer, Gibson, Work, Boyd, Swan, C. C. Fowler and Dr. Strickler in closing.

On motion of Dr. Spencer, seconded by Dr. Beggs, the matter proposed in the paper was referred to the Committee on Public Policy and Legislation of the House of Delegates with power to act and, if necessary, to report back to the Society at the proper time.

Dr. S. R. McKelvey, Denver, presented a paper on "State Program for the Control of Venereal Disease", which was discussed by Drs. Davis, Hartwell, Boyd, Low, Minnie C. T. Love, Hickey and the essayist in closing.

Second Day—Afternoon Session.

The Society was called to order by the President at 2 o'clock p. m. pursuant to adjournment.

Dr. G. A. Moleen, Denver, presented a paper on "Discrepancies Between the Clinical Symptoms and Laboratory Findings in Syphilitic Disease of the Nervous System", which was discussed by Drs. W. W. Williams, Hillkowitz, E. C. Webb, Hickey and, in closing, by the essayist.

Dr. J. W. Ames, Denver, read a paper on "Splenic Anemia in Children", which was discussed by Drs. O. M. Gilbert, Gengenbach and by Dr. Ames in closing.

Dr. Philip Hillkowitz, Denver, read a paper on

"The Control of Cancer", which was discussed by Drs. Powers, Stoddard, Shere, Hickey and the essayist in closing.

Dr. F. P. Gengenbach, Denver, read a paper on "Teaching Simplified Infant Feeding", which was discussed by Drs. Kennelley, Spivak, Ames, Blickensderfer, Tremaine, Cattermole, Pratt and the essayist in closing.

Dr. James Rae Arneill, Denver, read a paper on "Empyema as Seen at Camp Kearney During the Recent Epidemic of Influenza", the discussion on this paper being carried over to the morning session of October 9.

October 9—Third Day—Morning Session.

The convention was called to order by the President pursuant to adjournment to 9 o'clock a. m.

Mr. E. W. Corn, representing the Mountain Division of the American Red Cross, addressed the Society. He was followed by Mr. E. L. Scholtz, who spoke as a representative of the Anti-Tuberculosis Society.

Drs. J. N. Hall and S. B. Childs presented a paper on "Empyema: Clinical Diagnosis; X-ray Diagnosis", the paper being read by Dr. Hall and the x-ray features explained by Dr. Childs, with exhibition of slides. This paper and the one of Dr. Arneill which had been read the day before were discussed jointly by Drs. McKinnie, Shere, Taussig, Mayhew, Grant, Hillkowitz, Stoddard, Jones, Epler, Powers and, in closing, by Dr. Hall.

Dr. John B. Hartwell, Colorado Springs, presented a paper on "A Report of Three Cases Presenting a Masto-Uterine Syndrome Wholly Relieved by Luteum", which was discussed by Drs. Ingraham, Ferris, Singer and, in closing, by the essayist.

Dr. O. S. Fowler, Denver, presented a paper on "Differential Diagnosis of Ureteral Obstruction from Lesions of Other Abdominal Organs", which was discussed by Drs. Shere, T. R. Love, Evans and the essayist in closing.

Dr. A. J. Nossaman, Pagosa Springs, read a paper on "Subcutaneous Use of Lobelia", which was discussed by Drs. Singer and Gilbert and by the essayist in closing.

The Report of the House of Delegates was then read by the Secretary.*

Upon motion made, seconded and carried, the same was adopted.

Third Day—Afternoon Session.

Dr. G. M. Blickensderfer, Denver, read a paper on "Vaccine Therapy in Pertussis", which was discussed by Drs. Gengenbach, Friedman, Singer and, in closing, by the essayist.

A paper entitled "Ileus", prepared by Dr. J. L. Mortimer, was read by Dr. A. S. Taussig and discussed by Drs. Taussig, Freeman, Tennant, Shere and the essayist in closing.

Dr. C. E. Tennant, Denver, read a paper on "Etiological Factors and Treatment of Certain Types of Surgical Infections", which was discussed by Drs. Freeman, Powers and the essayist in closing.

Dr. C. A. Powers, Denver, delivered an address on "The Treatment of Septic Joints After the Method of Willems of Ghent", the subject being discussed by Drs. Dean, Packard, Goodloe, Singer, Jones and Tennant, and by Dr. Powers in closing.

Dr. O. M. Shere, Denver, presented a paper on "Indications for Operative Treatment in Cranial Fractures", which was discussed by Dr. Freeman and by the essayist in closing.

J. CRUM EPLER, Secretary.

*Editor's Note: The full proceedings of the House of Delegates appear in the November, 1919, issue of Colorado Medicine.

List of Members of the Colorado State Medical Society

December 1st, 1919

Name.	Postoffice.	Constituent Society.	Name.	Postoffice.	Constituent Society.
Abdun-Nur, A. S.	Walsenburg	Huerfano	Beyer, T. E.	Denver	Denver
Aberg, A.	San Luis	San Luis Valley	Biglow, May T.	Denver	Denver
Abrahams, H. E.	Trinidad	Las Animas	Biles, J. A.	Del Norte	San Luis Valley
Adami, J. Geo.	Montreal, Quebec	Denver	Bingham, W. J.	Denver	Denver
Adams, O. F.	Segundo	Las Animas	Birkenmayer, W. C.	Denver	Denver
Adkinson, R. C.	Florence	Fremont	Bixler, C. W.	Erie	Boulder
Agan, J. N.	Pierce	Weld	Black, H. A.	Pueblo	Pueblo
Albi, Rudolph	Denver	Denver	Black, J. A.	Pueblo	Pueblo
Allen, H. J.	Denver	Denver	Black, Melville	Denver	Denver
Allen, H. W.	Boulder	Boulder	Blackerby, R. E.	Branson	Las Animas
Allen, J. H.	Denver	Denver	Blackman, A. A.	Colorado Springs	El Paso
Allen, L. R.	Colorado Springs	El Paso	Blackwood, H. A.	Weldona	Morgan
Allen, W. P.	Greeley	Weld	Blickensderfer, G. M.	Denver	Denver
Amesse, John W.	Denver	Denver	Block, Leon	Pueblo	Pueblo
Anderson, A.	Ault	Weld	Blotz, B. B.	Rocky Ford	Otero
*Anderson, B. P.	Colorado Springs	El Paso	Blotz, B. F.	Rocky Ford	Otero
Anderson, Geo. M.	Casper, Wyo.	Denver	Bluemel, C. S.	Denver	Denver
Anderson, T.	Denver	Denver	Blumberg, A. M.	Denver	Denver
Andrew, C. F.	Longmont	Boulder	Bolten, L. C.	Cedar Edge	Delta
Andrew, John	Longmont	Boulder	Bonesteel, A. E.	Denver	Denver
Andrews, Geo. D.	Walsenburg	Huerfano	Bonney, S. G.	Denver	Denver
Apperson, Ed. L.	Denver	Denver	Booth, C. C.	Fleming	Denver
Arndt, Rudolph W.	Denver	Denver	Bortree, L. W.	Colorado Springs	El Paso
Arneill, James R.	Denver	Denver	Bouslog, J. S.	Denver	Denver
Arnold, C. R.	Colorado Springs	El Paso	Boyd, E. T.	Denver	Denver
Arnold, W. W.	Colorado Springs	El Paso	Boyd, Geo. A.	Colorado Springs	El Paso
Asquith, A. C.	Denver	Denver	Braden, J. M.	Lafayette	Boulder
Atkinson, Curtis	Ft. Collins	Larimer	Brady, E. J.	Colorado Springs	El Paso
Atcheson, Geo.	Denver	Denver	Bramley, J. R.	Denver	Denver
Atwood, A. D.	Denver	Denver	Brandenburg, H. P.	Denver	Denver
Aufmwasser, H. W.	Denver	Denver	Brandon, E. Agnes	Denver	Denver
Aust, T. H.	Cedar Edge	Delta	Brethouwer, C. G.	Montrose	Montrose
Averill, H. W.	Evans	Weld	Brinton, W. T.	Cripple Creek	Teller
Babcock, M. L.	Sterling	Northeast	Broman, O. F.	Greeley	Weld
Baca, J. F.	Antonito	San Luis Valley	Bronson, D. A.	Smugglers	Montrose
Bagot, W. S.	Denver	Denver	Bronson, W. T.	Pueblo	Pueblo
Bailey, M. M.	Loveland	Larimer	Brown, E. H.	Pueblo	Pueblo
Baird, Wm. J.	Boulder	Boulder	Brown, Geo. E.	Denver	Denver
Baker, Madeleine M.	Denver	Denver	Brown, H. C.	Denver	Denver
Baker, R. C.	Denver	Denver	Brown, H. J.	Colorado Springs	El Paso
Baker, W. H.	Pueblo	Pueblo	Brown, L. G.	Colorado Springs	El Paso
Baker, W. T. H.	Pueblo	Pueblo	Brown, Wm. S.	Denver	Denver
Bancroft, G. W.	Colorado Springs	El Paso	Brownell, W. F.	Ft. Collins	Larimer
Bane, Wm. C.	Denver	Denver	Brunk, A. S.	La Junta	Otero
Bane, W. M.	Denver	Denver	Bryson, E. H.	Grand Junction	Mesa
Barbour, W. L.	Ludlow	Las Animas	Buchtel, F. C.	Denver	Denver
Barney, J. M.	Denver	Denver	Buck, W. E.	Pueblo	Pueblo
Barney, N. E.	Sterling	Northeast	Bulette, W. W.	Los Angeles, Cal.	Pueblo
Barrett, G. W.	Crook	Northeast	Bull, H. R.	Grand Junction	Mesa
Baskin, M. J.	Denver	Denver	Bundsen, C. A.	Denver	Denver
Bast, Lee	Delta	Delta	Burdick, W. T.	Denver	Denver
Bates, Mary E.	Denver	Denver	Burgin, Chas. H.	Delta	Delta
Baum, Harry L.	Denver	Denver	Burket, R. S.	Denver	Denver
Beachly, John V.	Stratton	Unattached	Burkhard, Ed. D.	Delagua	Las Animas
Beaghtler, Amos L.	Denver	Denver	Burnett, A. L.	Silverton	San Juan
Beall, Kate W.	Denver	Denver	Burnett, C. T.	Denver	Denver
Beatty, J. T.	Denver	Denver	Burnett, N. M.	Lamar	Prowers
Beck, L. H.	Manitou	El Paso	Burnham, N. G.	Denver	Denver
Beck, N. C.	Denver	Denver	Burns, C. P.	Denver	Denver
Beere, Rose Kidd	Denver	Denver	*Burns, H. R.	Denver	Denver
Beers, Ida V.	Denver	Denver	Burns, T. M.	Denver	Denver
Beggs, Wm. H.	Denver	Denver	Bush, J. H.	Sterling	Northeast
Bell, Samuel H.	Montrose	Montrose	Butterbaugh, Wm. S.	Engleburg	Las Animas
Bellrose, N. W.	Eaton	Weld	Calkins, H. A.	Leadville	Lake
Bender, A. J.	Salida	Lake	Calonge, G. E.	La Junta	Otero
Bennett, E. C.	Boulder	Boulder	Campbell, A. J.	Denver	Denver
Bergen, Frank L.	Burlington	Denver	Campbell, J.	Boulder	Boulder
Berlin, Wm. C. K.	Denver	Denver	Campbell, W. A.	Colorado Springs	El Paso
Beshoar, Ben	Trinidad	Las Animas	*Campbell, W. H.	Pueblo	Pueblo

Name.	Postoffice.	Constituent Society.	Name.	Postoffice.	Constituent Society.
Canby, H. S.....	Denver	Denver	Dally, H. H.....	Walsenburg	Huerfano
Carey, G. C.....	Grand Junction	Mesa	Danahey, T. J.....	Denver	Denver
Carey, J. D.....	Thnath	Larimer	Daniel, J. H.....	Sterling	Northeast
Carmichael, Paul W.....	Sopres	Las Animas	Darling, J. C.....	Antonito....	San Luis Valley
Carmody, T. E.....	Denver	Denver	Darrow, C. H.....	Victor	Teller
Carreir, F. M.....	Santa Rita, N. M....	Fremont	Davenport, L. O....	Craig	Routt
Cary, F. H.....	Denver	Denver	Davies, J. D.....	Alamosa....	San Luis Valley
Case, A. G.....	Denver	Denver	Davis, A. C.	Wiley	Prowers
Cattermole, Geo. H.....	Denver	Denver	Davis, A. L.	Durango	San Juan
Cavey, J. E.....	Stratton	Unattached	Davis, J. B.	Denver	Denver
Casley, W. N.....	Long Beach, Cal.....	El Paso	Davis, T. A.	Portland	Fremont
Cecchini, A. S.....	Denver	Denver	Davis, Wm. H.	Denver	Denver
Chamberlain, F. C.....	Los Angeles, Cal....	Denver	Davlin, C. A.....	Alamosa....	San Luis Valley
Chamberlain, R. S.....	Denver	Denver	Dawson, J. K.....	Sterling	Northeast
Chambers, J. C.....	La Jara....	San Luis Valley	Day, H. S.	Delta	Mesa
Champlin, H. H.....	Denver	Denver	Day, W. A.	Delta	Delta
Chandler, G. B.....	Calhan	El Paso	Dean, E. F.....	Denver	Denver
Chapman, W. S.....	Walsenburg	Huerfano	*DeArmond, W. N...	Ft. Collins	Larimer
Charles, Robert L.....	Denver	Denver	DeBeque, W. A. E...	DeBeque	Denver
Chase, John	Denver	Denver	Delehanty, Ed.	Denver	Denver
Chase, P. M.	Denver	Denver	Dennis, F. L.....	Colorado Springs....	El Paso
Chesmore, H. P....	Colorado Springs....	El Paso	Denny, R. H.....	Elbert	Denver
Childs, S. B.....	Denver	Denver	DeSobe, J. O.....	Denver	Denver
Chipman, J. C.....	Sterling	Northeast	Dewey, Albert W...	Denver	Denver
Chisholm, A. J.....	Trinidad	Las Animas	Didrickson, F. G...	Montrose	Montrose
Christopher, D. I...	Colorado Springs....	El Paso	Dodge, H. C.	Boulder	Boulder
Church, W. F.....	Greeley	Weld	Dodge, H. O.	Boulder	Boulder
*Churchill, W. J...	Longmont	Boulder	Dorset, B. C.....	Denver	Denver
Clarke, Edwin A....	Akron	Unattached	Douglass, A. L....	Denver	Denver
Clarke, L. G.....	Glenwood Springs ..	Garfield	Downing, E. D....	Woodman	El Paso
Cleland, W. S.....	Delta	Delta	Downs, J. E.....	Hayden	Routt
Clow, J. E.....	Denver	Denver	Drechsler, Wm. ...	Denver	Denver
Cochems, F. N.....	Salida	Lake	Drinkwater, R. L...	Denver	Denver
Cochran, James D....	Haxtun	Northeast	Drisdale, W. E....	Silver Plume....	Las Animas
Coffman, F. R.....	Denver	Denver	Drown, L. M.....	Denver	Denver
Cohen, H. M.....	Denver	Denver	Duncan, Oscar A...	Crawford	Delta
Cole, F. E.....	Denver	Denver	Dunkle, R. C.....	Cokedale	Las Animas
Collins, E. W.....	Denver	Denver	Dunklee, Geo. K...	Denver	Denver
Conant, E. F.....	Denver	Denver	Dunlop, Josephine N.	Pueblo	Pueblo
Condon, C. E.....	Breckenridge	Lake	Durnell, A.	Walsenburg	Huerfano
Cook, D. M.....	Julesburg	Northeast	Dutton, F. G.....	Julesburg	Northeast
Cooper, C. E.	Denver	Denver	Dunwoody, J. A....	Cripple Creek	Teller
Cooper, Henry S. ..	Denver	Denver	Dworsak, Z. von...	Denver	Denver
Cooper, Horace S....	Denver	Denver	Dyde, C. B.....	Greeley	Weld
Coover, D. H.....	Denver	Denver	Dymenberg, N. ...	Minturn	Denver
Copeland, W. C....	Hotchkiss	Delta	Eakins, C. F.....	Brush	Morgan
Corlett, T. G.....	Colorado Springs....	El Paso	Earle, Jas. R.....	Somerset	Delta
Corwin, R. W.....	Pueblo	Pueblo	Earley, A. H.....	Denver	Denver
Costigan, Daniel D...	Trinidad	Las Animas	Elder, C. S.....	Denver	Denver
Covelle, W. W.....	Blanca....	San Luis Valley	Elder, E. A.....	Denver	Denver
Craghead, W. S.....	Denver	Denver	Edson, C. E.....	Denver	Denver
Craig, A. C.	Denver	Denver	Edwards, E. G. ...	La Junta	Otero
Craig, A. R.	Mesa	Mesa	Edwards, G. M. ...	Denver	Denver
Craig, H. F.	Denver	Denver	Eichberg, S. B....	Denver	Denver
Craig, Wm. B.	Denver	Denver	Eigler, C. O.....	Denver	Denver
Craighead, J. W....	Pueblo	Pueblo	Elliott, C. E.	Victor	Teller
Craney, J. P.....	Denver	Denver	Elliott, C. H.	Denver	Denver
Crawford, E.	Hudson	Weld	Elliott, H. R.	Denver	Denver
Crawley, Z. T.....	Monte Vista.....	San Luis Valley	Elliott, J. T.	Denver	Denver
Creighton, B. B....	Manitou	El Paso	Ellis, C. A.	Denver	Denver
Crews, Geo. B.....	Denver	Denver	Ellis, J. W.	Denver	Denver
Crisp, J. D.	Denver	Denver	Elsner, J. L.....	Denver	Denver
Crisp, Wm. H.	Denver	Denver	Emery, H. G.....	Bennett	Denver
Crook, W. W.....	Glenwood Springs ..	Garfield	Engelson, C. J....	Brookings, S. D....	Denver
Crosby, L. G.....	Denver	Denver	Enos, Clinton	Denver	Denver
Cross, J. W. S.....	Telluride	Montrose	Epler, Crum	Pueblo	Pueblo
Crouch, J. B.....	Woodman	El Paso	Erich, A. F.....	Paonia	Delta
Cryer, W. H.....	Colorado Springs....	El Paso	Espey, J. G.	Trinidad	Las Animas
Cunningham, A.	Denver	Denver	Espey, J. R.	Trinidad	Las Animas
Curfman, G. H.....	Salida	Unattached	Evans, E. E.	Ft. Morgan	Morgan
Curigan, M. D....	Denver	Denver	Evans, T. J.	Colorado Springs....	El Paso
Curtis, H. B.....	Denver	Denver	Ewing, G. F.....	Julesburg	Northeast
Currey, E. M.....	Hastings	Las Animas	Faith, A. H.....	Kremmling	Denver
Dake, W. M.....	Hot Springs, Ark....	Denver	Fantz, T. S.....	Denver	Denver
Dale, J. E.....	Ft. Collins	Larimer	Farrand, L.	Boulder	Boulder

Name.	Postoffice.	Constituent Society.	Name.	Postoffice.	Constituent Society.
Farrington, F. H.	Boulder	Boulder	Groves, D. C.	Olathe	Montrose
Farthing, C. E.	Meeker	Garfield	Grover, B. B.	Colorado Springs	El Paso
Faust, F. A.	Colorado Springs	El Paso	Guthrie, Alice B.	Denver	Denver
Fee, L. W.	Wiley	Prowers	Guthrie, Ewing C.	Denver	Denver
Ferris, C. A.	Denver	Denver	Guthrie, J. F.	Vineland	Pueblo
Ferguson, J. H.	Colorado Springs	El Paso	Hadley, Edgar	Montrose	Montrose
Fezer, Florence	Greeley	Weld	Hall, H. E.	La Junta	Otero
Filmer, B. A.	Colorado Springs	El Paso	Hall, Josiah N.	Denver	Denver
*Finney, Frank	La Junta	Otero	Halley, S. C.	Ft. Collins	Larimer
Finney, H. S.	Denver	Denver	Halley, W. H.	Pueblo	Pueblo
Finney, R. H.	Pueblo	Pueblo	Ham, Judson B.	Denver	Denver
Finnoff, Wm. C.	Denver	Denver	Hamilton, D. D.	Koehler, N. M.	Transferred to Colfax County, N. M.
Fischer, V. B.	Boulder	Boulder	Haney, J. R.	Colorado Springs	El Paso
Fisher, Carl D. W.	Denver	Denver	Hanford, P. O.	Colorado Springs	El Paso
Fitch, E. L.	Denver	Denver	Hansen, Charles O.	Denver	Denver
Fitzgerald, D. L.	Hartman	Prowers	Hanson, F. P.	Gunnison	Fremont
Foley, John Wm.	Denver	Denver	Hanson, K. K.	Grand Junction	Mesa
Ford, D. E.	East Weymouth, Mass.		Hardesty, W. B.	Berthoud	Larimer
		Las Animas	Harlow, W. P.	Boulder	Boulder
Ford, G. R.	Trinidad	Las Animas	Harmer, W. W.	Greeley	Weld
Ford, J. E.	Grand Junction	Mesa	Harris, Allen H.	Denver	Denver
Forhan, T. J.	Calcite	Las Animas	Harris, John W.	Denver	Denver
Forster, A. M.	Colorado Springs	El Paso	Harrison, Fleet H.	Fraser	Denver
Foster, J. M.	Denver	Denver	Hart, J. A.	Geneva, N. Y.	El Paso
Fowler, Harmon L.	Denver	Denver	Hartwell, John B.	Colorado Springs	El Paso
Fowler, Ora S.	Denver	Denver	Harvey, Horace G.	Denver	Denver
Fox, J. S.		San Juan	Haskell, E. E.	Windsor	Weld
Fox, M. R.	Sterling	Northeast	Hassenplug, G. K.	Denver	Denver
Frank, Lorenz W.	Denver	Denver	Hassenplug, Wm. F.	Cripple Creek	Teller
Frank, W. W.	Glenwood Springs	Garfield	Hawkins, T. H.	Boundbrook, N. J.	Denver
Fraser, M. Ethel V.	Denver	Denver	Haxby, H. G.	San Acacio	San Luis Valley
Frazer, R. W.	Denver	Denver	Hayes, A. I.	Victor	Teller
Freeman, Leonard	Denver	Denver	Hayes, Oscar	Denver	Denver
French, Samuel	Wilkes Barre, Pa.	Garfield	Hazlett, W. H.	Paonia	Delta
Freudenthal, A.	Trinidad	Las Animas	Healy, Michael D.	Denver	Denver
Friedman, Emanuel	Denver	Denver	Heath, Horace S.	Denver	Denver
Friend, F. Milton	Lamar	Prowers	Hegner, C. F.	Denver	Denver
Fugard, A. L.	Pueblo	Pueblo	Heller, Frederick M.	Pueblo	Pueblo
Fuson, C. C.	Milliken	Weld	Heller, P. H.	Pueblo	Pueblo
Gale, M. Jean	Denver	Denver	Henderson, H. S.	Grand Junction	Mesa
Gallaher, T. J.	Denver	Denver	Henkle, F. W. E.	Silverton	San Juan
Gardiner, C. F.	Colorado Springs	El Paso	Helper, A. H.	Newcastle	Garfield
Garwood, H. G.	Denver	Denver	Hepp, G. Brinton	Denver	Denver
Garwin, D. Edson	Golden	Denver	Hereford, J. H.	Colorado Springs	El Paso
Gengenbach, F. P.	Denver	Denver	Herrick, John C.	Denver	Denver
Gellen, Johanna	Denver	Denver	Herrman, L. L.	Alamosa	San Luis Valley
George, McLeod M.	Denver	Denver	Hershey, E. P.	Denver	Denver
Gibson, J. D.	Denver	Denver	Herson, R. G.	La Junta	Otero
Giese, C. O.	Colorado Springs	El Paso	Hess, Wm. L.	Denver	Denver
Giffen, L. M.	Boulder	Boulder	Hetherington, A. J.	Boulder	Boulder
Giffin, Clay E.	Boulder	Boulder	Hick, L. A.	Delta	Delta
Gilbert, G. B.	Colorado Springs	El Paso	Hickey, Clinton G.	Denver	Denver
Gilbert, O. M.	Boulder	Boulder	Higbee, C. F.	Fowler	Otero
Gill, A. E.	Berwind	Las Animas	Higgins, John W.	Denver	Denver
Gillaspie, Carbon	Boulder	Boulder	Hill, E. C.	Denver	Denver
Gillett, O. R.	Colorado Springs	El Paso	Hill-Crawford, J. T.	Denver	Denver
Gilmore, G. B.	Colorado City	El Paso	Hill, W. K., Jr.	Colorado Springs	El Paso
Gjellum, A. B.	Del Norte	San Luis Valley	Hillkowitz, Philip	Denver	Denver
Gleason, R. L.	Wellington	Larimer	Hinshaw, J. D.	Hurley, N. M.	Fremont
Gooding, B. A.	Ft. Collins	Larimer	Hoag, D. E.	Pueblo	Pueblo
Goodloe, Hart	Cañon City	Fremont	Hoagland, H. W.	Colorado Springs	El Paso
Goodson, H. C.	Colorado Springs	El Paso	Holden, G. Walter	Denver	Denver
Gorsuch, John C.	Denver	Denver	Holmes, R. E.	Cañon City	Fremont
Gotthelf, I. L.	Saguache	San Luis Valley	Hopkins, G. A.	Glenwood Springs	Garfield
Graham, Chas. A.	Denver	Denver	Hopkins, John R.	Denver	Denver
Graham, E. V.	Breckenridge	Lake	Horan, E. J.	Glenwood Springs	Garfield
Graham, R. F.	Greeley	Weld	Horn, Andrew J.	Denver	Denver
Grant, W. W.	Denver	Denver	Horton, D. J.	LaSalle	Weld
Grantham, O. A.	Johnstown	Weld	Hotchkiss, Walter K.	Brighton	Denver
Graves, C. H.	Cañon City	Fremont	Howard, Chas. J.	Utah	Pueblo
Green, H. A.	Boulder	Boulder	Howard, J. F.	Pueblo	Pueblo
Greene, J. L.	Eagle	Garfield	Howard, T. Leon	Denver	Denver
Greig, Wm.	Sterling	Northeast	Howell, Thos. F.	Alamosa	San Luis Valley
Griffin, E. G.	Denver	Denver	Hudston, R.	Denver	Denver
Griffith, B. F.	Leadville	Lake			

Name.	Postoffice.	Constituent Society.	Name.	Postoffice.	Constituent Society.
Huelsmann, L. C.	Colorado Springs	El Paso	Lee, H. C.	Trinidad	Las Animas
Hughes, T. A.	Denver	Denver	Lehan, J. W.	Greeley	Weld
Hummel, E. P.	Sterling	Northeast	Lemen, L. E.	Denver	Denver
Hunnicut, W. P.	Pueblo	Pueblo	Lennox, P. M.	Colorado Springs	El Paso
Hurst, W. N.	Center	San Luis Valley	LeRossignol, W. J.	Rifle	Garfield
Hutton, V. A.	Florence	Fremont	Levy, Robt.	Denver	Denver
Inglis, John	Denver	Denver	Lewis, Robert	Denver	Denver
Ingraham, C. B.	Denver	Denver	Lewis, W. H.	Hotchkiss	Delta
Irwin, Robert S.	Denver	Denver	Leyda, James H.	Clayton, N. M.	Denver
Jackson, Edward	Denver	Denver	Leyda, Paul	Frederick	Boulder
Jackson, F. A.	Salida	Unattached	Libby, Geo. E.	Denver	Denver
Jaeger, Chas.	Denver	Denver	Likes, L. E.	Lamar	Prowers
James, T. L.	Colorado Springs	El Paso	Lincoln, C. L., Jr.	Denver	Denver
James, Wm. D.	Denver	Denver	Lindahl, John	Denver	Denver
Jayne, W. A.	Denver	Denver	Lindsay, Kate	Boulder	Boulder
Jeannotte, J. A.	Leadville	Lake	Lingenfelter, G. P.	Denver	Denver
Jenkins, E. W.	Denver	Denver	Lingenfelter, H. A.	Durango	San Juan
John, Grant H.	Denver	Denver	Little, W. T.	Cañon City	Fremont
Johnson, E. E.	Cortez	San Juan	Lockard, Lorenzo B.	Denver	Denver
Johnson, Margaret	Boulder	Boulder	Lockwood, C. E.	Olathe	Montrose
Johnston, W. S.	Pueblo	Pueblo	Lockwood, F. W.	Ft. Morgan	Morgan
Johnston, R. S.	La Junta	Otero	Löff, A. J. O.	Denver	Denver
Jolley, W. A.	Boulder	Boulder	Long, Margaret	Denver	Denver
Jones, Robt. E.	Ft. Morgan	Denver	Long, T. F.	Denver	Denver
Jones, S. Fosdick	Denver	Denver	Loomis, P. A.	Colorado Springs	El Paso
Jones, Wm. W.	Denver	Denver	*Lord, H. A.	Pueblo	Pueblo
Joslyn, S. A.	Loveland	Larimer	Lorimer, H. F.	Ordway	Unattached
Judson, A. R.	Monte Vista	San Luis Valley	Love, Minnie C. T.	Denver	Denver
Keeney, M. J.	Pueblo	Pueblo	Love, Tracy R.	Denver	Denver
Keep, Frank E.	Denver	Denver	Low, H. T.	Pueblo	Pueblo
Keesee, W. H.	Haxtun	Denver	Lowen, Chas. J.	Denver	Denver
Kelley, John P.	Golden	Denver	Lucas, Wilbur	Pueblo	Pueblo
Kelsey, Otis H.	Denver	Denver	Lucy, D. A.	Denver	Denver
Kennedy, Arthur L.	Denver	Denver	Lunt, L. K.	Denver	Denver
*Kennedy, E. E.	Denver	Denver	Lusby, A. C.	Brush	Morgan
Kennedy, Geo. A.	Limon	Denver	Lyman, Chas. B.	Denver	Denver
Kennelley, F. C.	Denver	Denver	Lyons, Oliver	Denver	Denver
Kenny, F. W.	Denver	Denver	Macomber, Geo. N.	Denver	Denver
Kent, Wallace C.	Denver	Denver	Macomber, H. G.	Denver	Denver
Kern, B. F.	Platteville	Weld	MacLean, Luke	Pueblo	Pueblo
Kernaghan, M.	Steamboat Springs	Routt	Madden, J. H.	Colorado Springs	El Paso
Kickland, W. A.	Ft. Collins	Larimer	Madler, N. A.	Greeley	Weld
Killough, H. B.	Pueblo	Pueblo	Magruder, A. C.	Colorado Springs	El Paso
King, A. T.	Pueblo	Pueblo	Mahoney, J. J.	Colorado Springs	El Paso
King, D. M.	Denver	Denver	Male, J. T.	Yampa	Routt
King, Robt. W.	Denver	Denver	Mann, Alfred	Denver	Denver
King, W. W.	Cripple Creek	Teller	Manns, Rudolph	Denver	Denver
Kinney, J. E.	Denver	Denver	Marbourg, E. M.	Colorado Springs	El Paso
Kleiner, Moses	Denver	Denver	Markley, Arthur J.	Denver	Denver
Knoch, N. H.	Denver	Denver	Marmaduke, C. V.	Pueblo	Pueblo
Knott, A. W.	Montrose	Montrose	Marshak, M. I.	Edgewater	Denver
Knott, Isaiah, Jr.	Montrose	Montrose	*Martin, Herman H.	Denver	Denver
Knowles, E. W.	Greeley	Weld	Martin, W. F.	Colorado Springs	El Paso
Knowles, T. R.	Colorado Springs	El Paso	Mathews, P. G.	Walsenburg	Huerfano
Knuckey, C. T.	Lamar	Prowers	Matlack, J. A.	Longmont	Boulder
Kortwright, S. E.	Leadville	Lake	Matthews, B. H.	Denver	Denver
Krohn, H. N.	Denver	Denver	Maynard, C. W.	Pueblo	Pueblo
Krohn, M. J.	Denver	Denver	Maxwell, J. G.	Cañon City	Fremont
Kruse, May B.	Denver	Denver	MacArthur, A. M.	Delta	Delta
Kunitomo, N.	Denver	Denver	McCarrill, James	Denver	Denver
Lahmer, I. B.	Walsenburg	Huerfano	McCartney, F. M.	Denver	Denver
Lake, Mary	Ridge	Boulder	McCarty, D. W.	Berthoud	Larimer
Lamverton, Robt. E.	Trinidad	Denver	McCaw, J. A.	Denver	Denver
Lamme, J. M.	La Veta	Huerfano	McClanahan, A. C.	Delta	Delta
Lamme, S. J.	La Veta	Huerfano	McClanahan, Z. H.	Colorado Springs	El Paso
LaMoire, H. A.	Pueblo	Pueblo	McCleary, E. O.	Ordway	Unattached
Lane, Harold C.	Denver	Denver	McClure, C. O.	Starkville	Las Animas
Larimer, G. W.	Salida	Unattached	McConnell, J. F.	Colorado Springs	El Paso
LaRue, C. L.	Boulder	Boulder	McCorkle, H. B.	Colorado Springs	El Paso
Lassen, Fritz	Pueblo	Pueblo	McDonald, A. J.	Leadville	Lake
Latta, C. J.	Sterling	Northeast	McDonald, R. J.	Leadville	Lake
Lawney, Eleanor	Denver	Denver	McDonnell, J. J.	Pueblo	Pueblo
Lawson, J. A.	Rocky Ford	Otero	McEachern, C. G.	Denver	Denver
Leavitt, Byron C.	Millbrook	Denver	McFadden, J. G.	Loveland	Larimer
Lee, G. H.	Denver	Denver	McFarland, S. B.	Longmont	Boulder

Name.	Postoffice.	Constituent Society.	Name.	Postoffice.	Constituent Society.
McGee, R. P.....	Denver	Denver	Nossaman, A. J....	Pagosa Springs....	San Juan
McGraw, H. R.....	Denver	Denver	O'Conner, J. W....	Denver	Denver
McGugan, A.	Denver	Denver	Ogilbee, H. M.....	Manitou	El Paso
McHugh, P. J.....	Ft. Collins	Larimer	Ogle, W. M.....	Bowen	Las Animas
McIntyre, T. A....	Cripple Creek	Teller	O'Halloran, R. C...	Silverton	San Juan
McKay, J. H.....	Denver	Denver	Ohlstead, G. K....	Denver	Denver
McKeen, H. R.....	Denver	Denver	Olsen, D. G.....	Denver	Denver
McKelvey, S. R....	Denver	Denver	Oppenheim, S. M...	Denver	Denver
McKenney, G. P....	Denver	Denver	Oram, O. A.....	Crested Butte	Boulder
McKeown, E. E....	Denver	Denver	Orendorff, Otis ...	Cañon City	Fremont
McKenzie, C. D....	Denver	Denver	Orr, C. L.....	Alamosa....	San Luis Valley
McKibbin, S.	Creede.....	San Luis Valley	Orsborn, G. E.....	Denver	Denver
McKinnie, L. H....	Colorado Springs....	El Paso	Osborne, C. K....	Starbuck, Wash.	Lake
McLauthlin, H. W.	Denver	Denver	Packard, Geo. B....	Denver	Denver
McLauthlin, C. A..	Denver	Denver	Packard, Robt. G...	Denver	Denver
McLean, A. M.....	Leadville	Lake	Palmer, F. E.....	Sterling	Northeast
McMichael, A. O...	Denver	Denver	Palmer, W. A....	Castle Rock	Denver
McNaught, F. H....	Denver	Denver	Parker, Thadd	Denver	Huerfano
Meacham, J. W....	Denver	Denver	Passover, Lucy L...	Denver	Denver
Mead, Ella A.....	Greeley	Weld	Pate, C. E.....	Denver	Denver
Meador, Chas. N...	Denver	Denver	Pattee, J. J.....	Pueblo	Pueblo
Menkle, H. C.....	Simla, India	Denver	Patterson, J. A....	Colorado Springs....	El Paso
Menser, Bert	Denver	Denver	Patterson, W. O....	Pueblo	Pueblo
Meredith, Peck H. H.	Oakland, Cal.	Montrose	Peck, G. S.....	Denver	Denver
Metcalf, A. W....	Henderson	Denver	Pecony, Jos. W....	Denver	Denver
Middlekamp, M. S.	Pueblo	Pueblo	Peebles, R. E.....	Boulder	Boulder
Miel, Geo. W.....	Denver	Denver	Pennock, V. R....	Longmont	Boulder
Mierley, Ira C....	Denver	Denver	Perkins, C. C.....	Denver	Denver
Miles, Amy B.....	Boulder	Boulder	Perkins, J. M....	Denver	Denver
Miles, M. E.....	Boulder	Boulder	Perkins, I. B.....	Denver	Denver
Miller, Austin E...	Delta	Delta	Perrott, E. W., Jr.	Denver	Denver
Miller, Eli A.....	Denver	Denver	Pershing, C. L....	Denver	Denver
Miller, L. A.....	Colorado Springs....	El Paso	Pershing, H. T....	Denver	Denver
Miller, H. C.....	Del Norte....	San Luis Valley	Pestal, Joseph	Lamar	Prowers
Miller, L. I.....	Denver	Denver	Peters, A. H.....	Colorado Springs....	El Paso
Miller, Samuel W...	Denver	Denver	Phelps, E. M.....	Basalt	Garfield
Mills, Charles W...	Colorado Springs....	El Paso	Philpott, J. A....	Denver	Denver
Minnig, Arnold	Denver	Denver	Peirce, F. J.....	Pueblo	Pueblo
Mishkind, A. J....	Denver	Denver	Pitney, Orville ...	Cheraw	Otero
Mitchell, Wm. C...	Denver	Denver	Place, O. G.....	DeBeque	Denver
Moleen, G. A.....	Denver	Denver	Plumb, Carl W....	Grand Junction	Mesa
Monaghan, D. G....	Denver	Denver	*Pogue, Geo. R....	Greeley	Weld
Moninger, J. H....	Monte Vista.....	San Luis Valley	Poley, C. W.....	Boulder	Boulder
Monismith, A. T...	Ft. Lupton	Weld	Pollard, J. W.....	Denver	Denver
Monson, G. L.....	Denver	Denver	Pollock, A. R....	Monte Vista.....	San Luis Valley
Moore, A. M.....	Denver	Denver	Pollock, R. M....	Rocky Ford	Otero
Moore, F. R.....	Florence	Fremont	Porter, H. K.....	Delta	Delta
Moore, Edward	Colorado Springs....	El Paso	Porter, R. B.....	Fruita	Mesa
Moore, W. M.....	La Junta	Otero	Pothuisje, P. J....	Denver	Denver
Morgan, J. W.....	Denver	Denver	Powell, Cuthbert ...	Denver	Denver
Morian, C. H.....	Denver	Denver	Powers, Chas. A...	Denver	Denver
Morning, J. F.....	Denver	Denver	Pratt, Elsie S....	Denver	Denver
Morrill, E. L.....	Ft. Collins	Larimer	Presnall, C. W....	Trinidad	Las Animas
Morris, R. E.....	St. Paul, Minn....	Boulder	Prewitt, Francis E.	Denver	Denver
Morrish, R. W....	Ft. Collins	Larimer	Price, Evelyn B...	Pueblo	Pueblo
Morrison, C. S....	Colorado Springs....	El Paso	Printz, Morris ...	Denver	Denver
Morrison, R. G....	Denver	Denver	Purcell, James W...	Denver	Denver
Morse, C. E.....	Alamosa....	San Luis Valley	Queal, E. B.....	Boulder	Boulder
Mortimer, J. L....	Denver	Denver	Rader, Wm. H....	Colloran	Mesa
Morrow, E. L.....	Oak Creek	Routt	Ragsdale, E. W....	La Junta	Otero
Moses, H. C.....	Colorado Springs....	El Paso	Ramaley, Francis ..	Boulder	Boulder
Mugrage, E. R....	Denver	Denver	Raring, L. M.....	Grand Junction	Mesa
Mullin, W. V.....	Colorado Springs....	El Paso	Ramsey, R. T.....	Denver	Denver
Murphy, P. A.....	Denver	Denver	Rasar, R. B.....	Granada	Prowers
Myers, J. T.....	Hotchkiss	Delta	Raymond, E. T....	Wellington	Larimer
Naugie, J. E.....	Sterling	Northeast	Reed, C. W.....	Grand Junction	Mesa
Needham, Chas. N.	Denver	Denver	Reed, D. W.....	Saguache....	San Luis Valley
Needles, J. W....	Pueblo	Pueblo	Reed, W. K.....	Boulder	Boulder
Neeper, E. R.....	Colorado Springs....	El Paso	Replogle, B. F....	Ft. Collins	Larimer
Nelson, G. E.....	Windsor	Weld	Rew, A. W.....	Ft. Collins	Larimer
Neuhaus, G. E....	Denver	Denver	Rice, D. H.....	Colorado Springs....	El Paso
Nifong, J. D.....	Denver	Denver	Rich, W. F.....	Pueblo	Pueblo
Noble, Mary R....	Colorado Springs....	El Paso	Richards, D. F....	Denver	Denver
Noonan, G. M....	Delagua	Las Animas	Richardson, H. L...	Silverton	San Juan
Norton, D. O.....	Ft. Collins	Larimer	Richie, L. T.....	Trinidad	Las Animas

Name.	Postoffice.	Constituent Society.	Name.	Postoffice.	Constituent Society.
Richmond, C. E.	Colorado Springs	El Paso	Smith, H. F.	Ft. Collins	Larimer
Richmond, G. E.	Center	San Luis Valley	Smith, R. G.	Denver	Denver
Riddle, J. P.	Glenwood Springs	Garfield	*Smits, J.	Leadville	Lake
Rilance, Chas. D.	Denver	Denver	Snair, W. L.	Louisville	Boulder
Ringle, C. A.	Greeley	Weld	Snedec, J. F.	Pueblo	Pueblo
Robe, R. C.	Pueblo	Pueblo	Soland, L. W.	Alamosa	San Luis Valley
Roberts, J. C.	Denver	Denver	Spangleberger, M. A.	Denver	Denver
Roberts, J. P.	Palisades	Mesa	Spaulding, W. F.	Greeley	Weld
Robertson, E. H.	Boulder	Boulder	Spencer, F. R.	Boulder	Boulder
Robbins, A. W.	Durango	San Juan	Spicer, Chas. M.	Denver	Denver
Robinson, E. F.	Denver	Denver	Spicer, O. W.	Colorado Springs	El Paso
Robinson, G. W.	Trinidad	Las Animas	Spitzer, W. M.	Denver	Denver
Robinson, J. R.	Colorado Springs	El Paso	Spivak, C. D.	Denver	Denver
Roe, John F.	Denver	Denver	Stahl, A. W.	Denver	Denver
Roehrig, Karl F.	Denver	Denver	Stanley, A. F.	Pryor	Huerfano
Rogers, E. J. A.	Denver	Denver	Staunton, A. G.	Denver	Denver
Rogers, F. E.	Denver	Denver	Steeves, Chas. P.	Denver	Denver
Rogers, J. S.	Kiowa	Denver	Steinberg, B. M.	Pueblo	Pueblo
Rohlfing, R. F.	Colorado Springs	El Paso	Steinhardt, E. H.	Pueblo	Pueblo
Root, M. R.	Denver	Denver	Stemen, W. E.	Denver	Denver
Rook, C. W.	Julesburg	Northeast	Stephenson, F. B.	Denver	Denver
Rothwell, E. J.	Denver	Denver	Stevens, F. J.	Colorado Springs	El Paso
Rothwell, A. M.	Denver	Denver	Stevens, H. L.	Denver	Denver
Rothwell, P. D.	Denver	Denver	*Stewart, J. R.	Colorado Springs	El Paso
Rothwell, Wm. J.	Denver	Denver	Stewart, F. M.	Loveland	Larimer
Rothrock, F. B.	Colorado Springs	El Paso	Stilwill, H. R.	Denver	Denver
Rover, H. W.	Denver	Denver	Stirling, Margaret B.	Boulder	Boulder
Ruegnitz, L. H.	Denver	Denver	Stoddard, T. A.	Pueblo	Pueblo
Rupert, L. E.	Florence	Fremont	Stough, C. F.	Colorado Springs	El Paso
Russel, E. M.	Berwind	Las Animas	Stratton, Mary R.	Denver	Denver
Rutledge, J. A.	Woodman	El Paso	Strickler, D. A.	Denver	Denver
Sadler, E. L.	Ft. Collins	Larimer	Strong, J. C.	Leadville	Lake
Sams, Louis V.	Denver	Denver	Stubbs, A. L.	La Junta	Otero
Savage, Jos.	Denver	Denver	Stubbs, J. E.	La Junta	Otero
Scannell, E. J.	Trinidad	Las Animas	Stuver, E.	Ft. Collins	Larimer
Shaffer, E. G.	Delta	Delta	Stuver, H. W.	Denver	Denver
Schaefer, S. W.	Colorado Springs	El Paso	Sunderland, W. E.	Denver	Denver
Schermerhorn, E.	Montrose	Montrose	Swan, W. H.	Colorado Springs	El Paso
Scherrer, E. A.	Denver	Denver	Swartz, F. G.	Tipton, Mo.	Boulder
Schoen, W. A.	Victor	Teller	Swerdfeger, E. B.	Denver	Denver
Schneider, E. C.	Colorado Springs	El Paso	Swezey, Samuel	Denver	Denver
Scott, A. R.	Ft. Collins	Larimer	Tadlock, J. L.	Palisades	Mesa
Scott, Ira D.	Boulder	Boulder	Taussig, A. S.	Denver	Denver
Schwer, J. L.	Pueblo	Pueblo	Taylor, A. G.	Grand Junction	Mesa
Sedwick, Wm. A.	Denver	Denver	Taylor, C. F.	Pueblo	Pueblo
Seebass, A. R.	Denver	Denver	Taylor, Edward E.	Denver	Denver
Senger, Wm.	Pueblo	Pueblo	Taylor, H. L.	Denver	Denver
Sewall, Henry	Denver	Denver	Taylor, R. R.	Pueblo	Pueblo
Shafer, Harry S.	Denver	Denver	Taylor, T. C.	Ft. Collins	Larimer
Shands, H. R.	Colorado Springs	El Paso	Taylor, T. E.	Denver	Denver
Sharp, G. L.	Colorado Springs	El Paso	Tennant, C. E.	Denver	Denver
Shapiro, J. M.	Denver	Denver	Tepley, L. V.	Denver	Denver
Sharples, W. H.	Denver	Denver	Thompson, C. W.	Pueblo	Pueblo
Shea, R. M.	Denver	Denver	Thompson, David	Denver	Denver
Sheller, W. O.	Lamar	Prowers	Thompson, D. G.	Trinidad	Las Animas
Shelton, E. K.	Antonito	San Luis Valley	Thompson, H. M.	Pueblo	Pueblo
Shere, O. M.	Denver	Denver	Thompson, J. W.	Pueblo	Pueblo
Sherman, E. M.	Holly	Prowers	Thompson, H. A.	Denver	Denver
Shields, J. M.	Denver	Denver	Thompson, W. E.	Greeley	Weld
Shipman, F. M.	Victor	El Paso	Thulin, H. F.	Denver	Denver
Shippey, O. P.	Saguache	San Luis Valley	Timmons, E. L.	Colorado Springs	El Paso
Shivers, M. O.	Colorado Springs	El Paso	Todd, J. C.	Boulder	Boulder
Schofield, J. V.	Colorado Springs	El Paso	Tower, F. A.	Denver	Denver
Shollenberger, C. F.	Denver	Denver	Tremaine, Harmon	Denver	Denver
Shotwell, W. E.	Denver	Denver	Triplett, T. A.	Denver	Denver
Shultz, W. M.	Nederland	Fremont	Trossbach, Herman	Colorado Springs	El Paso
Sicklenberger, J. U.	Grand Junction	Mesa	Trueblood, Chas.	Monte Vista	San Luis Valley
Sidley, Frederick K.	Denver	Denver	Trout, A. L.	Walsenburg	Huerfano
Sidwell, C. E.	Longmont	Boulder	Truent, W. E.	Brush	Morgan
Simon, Saling	Denver	Denver	Tubbs, W. R.	Carbondale	Garfield
Singer, W. F.	Pueblo	Pueblo	Tucker, Beverley	Colorado Springs	El Paso
Skinner, M. G.	Washington, D. C.	Denver	Turner, W. E.	Brush	Morgan
Sloan, W. W.	Mt. Harris	Routt	Twyford, Mary D.	Pueblo	Pueblo
Smith, A. E.	Rifle	Denver	Tygart, C. A.	Denver	Denver
Smith, H. A.	Delta	Delta	Vandenberg, F. P.	Greeley	Weld

Name.	Postoffice.	Constituent Society.
Vanderhoof, D. A.	Colorado Springs	El Paso
Van Der Schouw, G. E.	Fowler	Otero
Van Meter, L. M.	Denver	Denver
Van Meter, S. D.	Denver	Denver
Van Zant, C. B.	Denver	Denver
Vogt, H. J.	Pueblo	Pueblo
Von Der Smith, P.	Denver	Denver
Vroom, J. N.	Denver	Denver
Wade, L. H.	Denver	Denver
Wade, Pitt A.	Cañon City	Fremont
Walker, A. G.	Superior	Boulder
Walker, C. E.	Denver	Denver
Wallace, G. C.	Denver	Denver
Wallace, J. F.	Woodman	El Paso
Wallace, F. E.	Pueblo	Pueblo
Waring, J. J.	Denver	Denver
Warner, G. R.	Grand Junction	Mesa
Washburn, Frank L.	Denver	Denver
Wasson, W. W.	Denver	Denver
Waters, P. A.	U. S. Army Base Hosp., Ft. Riley, Kan.	San Luis Valley
Watson, W. V.	Plateau City	Mesa
Webb, E. C.	Cañon City	Fremont
Webb, G. B.	Colorado Springs	El Paso
Weber, Fred H.	Idaho Springs	Denver
Weber, Mary A.	Idaho Springs	Denver
Weld, J. C.	Denver	Denver
Weldon, Luther J.	Denver	Denver
Wenk, J. A.	Denver	Denver
West, T. J.	Denver	Denver
Wescott, O. D.	Denver	Denver
Wetherill, H. G.	Denver	Denver
Whitaker, H. L.	Denver	Denver
White, H. T.	Avondale	Pueblo
White, H. W.	Fruita	Mesa
White, W. J.	Longmont	Boulder
Whitmore, E. A.	Leadville	Lake
Whitney, H. B.	Denver	Denver
Whittaker, D. L.	Mt. Harris	Routt
Wiest, Newton	Denver	Denver
Wilcox, H. W.	Denver	Denver
Wilkins, C. F.	LaPorte	Larimer
Wilkinson, C. H.	Cañon City	Fremont
Wilkinson, W. M.	Denver	Denver
Willett, F. E.	Steamboat Springs	Routt
Williams, A. F.	Ft. Morgan	Morgan
Williams, S.	Denver	Denver
Williamson, W. A.	Rockvale	Fremont
Williams, A. H.	Denver	Denver
Williams, W. W.	Denver	Denver
Williams, W. E.	Denver	Denver
Willis, C. H.	Denver	Denver
Willson, M. O.	Ft. Morgan	Morgan
Wilson, D. R.	Holly	Prowers
Winslow, W. H.	Ft. Collins	Larimer
Winston, A. L.	Colorado Springs	El Paso
Witter, Roy V.	Elizabeth	Denver
Wolfe, John	Pueblo	Pueblo
Wolfe, R. E.	Rocky Ford	Otero
Wolfer, C. F.	Louisville	Boulder
Wollenweber, L. C.	Denver	Denver
Wood, W. H.	Greeley	Weld
Wood, G. W.	Bristol	Prowers
Woodbridge, J. H.	Pueblo	Pueblo
Woodcock, B.	Greeley	Weld
Woodhull, A. A.	Denver	Denver
Woods, W. P.	Longmont	Las Animas
Work, Hubert	Pueblo	Pueblo
Work, Philip	Pueblo	Pueblo
Workman, C. W.	Sugar City	Unattached
Worthington, A. K.	Denver	Denver
Wright, R. E.	Loveland	Larimer
Yates, W. W.	Loveland	Larimer

Name.	Postoffice.	Constituent Society.
Yont, Kate	Denver	Denver
Young, C. M.	Sterling	Northeast
Young, N. H.	Pueblo	Pueblo
Zederbaum, Adolf	San Diego, Cal.	Denver
Zener, Mary L.	Boulder	Boulder
Zillman, O. E.	Manzanola	Otero
Zimmerman, Wm.	Denver	Denver
Zinke, Wm.	Collbran	Mesa

*Deceased.

THE COLORADO STATE MEDICAL SOCIETY.

(Incorporated November 1, 1888.)

The next meeting will be held in Glenwood Springs, September 7, 8, 9, 1920.

OFFICERS, 1919-1920.

President, F. H. McNaught, Denver.
President-elect, F. R. Spencer, Boulder.
Vice Presidents—1st, W. S. Chapman, Walsenburg; 2nd, Josephine N. Dunlop, Pueblo; 3rd, G. C. Carey, Grand Junction; 4th, B. Woodcock, Greeley.
Secretary, Crum Epler, Pueblo.
Treasurer, W. A. Sedwick, Denver; Acting Treasurer, W. H. Crisp, Denver.

COMMITTEES.

(Appointments to be published later.)

News Notes

Dr. Chas. A. Powers of Denver has been chosen president of the American Society for the Control of Cancer.

Dr. J. W. Amessee is the author of the official book of first aid for the Boy Scouts of America, which has just recently been published and is called "First Aid Merit Badge Book".

Dr. F. S. Spearman, a graduate of McGill University, has located at Rifle for general practice. Boulder County Medical Society is favoring an increase in fees for Boulder and vicinity. A committee was appointed at a recent meeting to suggest fees which they consider justified by present conditions.

Dr. C. H. Darrow of Victor is taking a nine months' postgraduate course in eye, ear, nose and throat work at the Manhattan Hospital, New York City.

Otero County News.

Dr. A. S. Brunk of La Junta has returned after a three months' trip through the East. Dr. G. C. Kerley, late of Kansas City, who has been in the office during Dr. Brunk's absence, will stay in La Junta permanently.

Dr. J. L. Stubbs of La Junta returned November 22nd from a month's visit with relatives in Michigan.

Dr. P. J. Ragsdale of Lee Summit, Mo., spent Thanksgiving with his brother, Dr. E. W. Ragsdale of La Junta.

El Paso County News.

Dr. F. B. Rothrock has moved to Long Beach, Cal.

Mrs. G. B. Gilbert, wife of Dr. G. B. Gilbert, died in October after a long illness.

Dr. Beverly Tucker has returned after a month's vacation spent in Virginia.

Medical Societies

COLORADO OPHTHALMOLOGICAL.

The regular meeting of the **Colorado Ophthalmological Society** was held in Colorado Springs on October 18, 1919, Dr. E. M. Marbourg presiding.

J. C. Decker, Cheyenne, and W. M. Bane, Denver, were elected to membership in the society.

E. R. Neeper, Colorado Springs, presented a case of penetrating injury of the eye by a piece of steel. Discussed by Melville Black, C. E. Walker, W. C. Finnoff, D. H. Coover and W. H. Crisp.

E. R. Neeper, Colorado Springs, presented a case of iritis complicated by posterior synechia, there being some suspicion of the presence of a tumor in the eye. Discussed by Melville Black, W. H. Crisp, E. M. Marbourg, D. H. Coover and W. C. Finnoff.

F. E. Wallace, Pueblo, presented a man whose right eye had been penetrated by a sixpenny nail, with some loss of vitreous and a good deal of subsequent disturbance of vision. Discussed by E. R. Neeper, Melville Black, J. R. McCaw and E. M. Marbourg.

A. C. Magruder, represented by his associate, Dr. Brown, presented three cases: (1) an old case of injury with remains of a dislocated lens; (2) a child with very highly hyperopic eyes and extreme congenital defect of vision; (3) a case of old choroiditis. Discussed by Melville Black and W. C. Finnoff.

J. J. Pattee reported a case of failing vision of obscure origin. Discussed by E. R. Neeper, Melville Black and F. E. Wallace.

E. M. Marbourg presented a case of retinitis pigmentosa with night blindness and contracted fields.

W. C. Finnoff presented for W. C. Bane an enucleated eyeball in which there was apparently a tumor, but of which sections had not yet been made. Discussed by Melville Black and W. C. Finnoff.

WM. H. CRISP,
Secretary.

CITY AND COUNTY OF DENVER.

The regular business meeting of the **Medical Society of the City and County of Denver** was held November 4, 1919. President Jackson was in the chair.

It was moved and carried that the secretary should notify Dr. Crum Epler that the society would accept the invitation for postgraduate instruction which the Colorado State Society is proposing. The advisability of establishing for physicians an old age and disability insurance, which the American Medical Association is considering, was referred to the Board of Trustees.

The following physicians were elected to membership in the society: Drs. C. T. Burnett, Wallace C. Kent, James H. Leyda, Eli A. Miller, Joseph W. Pecony, Charles D. Rilance, Charles P. Steeves and Edward E. Taylor.

Dr. C. E. Edson made the announcement that a society to study medical history was being formed. The first meeting will be held Wednesday, November 26, 1919, at 8 o'clock, and thereafter the last Wednesday of each month in the society assembly hall.

The scientific program began with a paper by Dr. H. P. Brandenburg upon "A New Technic for X-ray Examination of the Solid Abdominal Viscera". He said it had been noticed that when gas

was present in the intestines the inferior border of the liver could be demonstrated. This fact has led several operators to inject air into the colon, but it has not proved satisfactory. The accidental injection of air into the abdominal cavity suggested a means by which the abdominal contents could be outlined, if a sufficient quantity of air were injected. Last spring at the County Hospital, Dr. Brandenburg removed the fluid in two cases of ascites in the usual manner and replaced it by air, then radiographed the abdomen. The result was more than satisfactory. It was found that if considerable air was injected and allowed to remain about one hour, then a third released, the results were better. The apparatus used is the same as required to perform pneumothorax, with the addition of a small trocar for introduction in the abdominal cavity. Dr. Brandenburg then exhibited to the society the slides taken from the radiographs. Dr. A. S. Taussig, who had these cases of ascites during his service at the County Hospital, opened the discussion. He said the method, although new, was not original, and could be used with advantage in cases of ascites, but he believed it should be confined to these cases. As the air is usually a long time being absorbed and causes some distress, it should be withdrawn from the patient before leaving the hospital. Dr. F. B. Stephenson was confident that it would be a valuable addition to roentgenology. He spoke of reading the accounts of its being used in other cities, where they are now using oxygen, which should be absorbed in twelve hours. It will be a great advantage in fluoroscopic work especially. The patient is placed upon a horizontal table in front of the upright fluoroscope. Since the oxygen rises to the uppermost part of the cavity, changing the patient from one side to the other and raising or lowering one end of the table will serve to throw any particular organs desired into relief by contrast with the gas. The dangers should be no greater than attend intravenous injections. Peritoneal adhesions can be seen, as well as ovaries, uterus, spleen, kidneys and liver. No untoward results have been reported so far. It may soon be a recognized procedure in obscure abdominal conditions. Dr. H. J. Carper spoke of repeatedly injecting air into the peritoneal cavities of animals and he found that it was followed with no pathological results. He said it took three or four days for the air to disappear from the abdomen.

The next on the program was an excellent and carefully prepared paper upon "Tuberculous Empyema" by Dr. William S. Duboff, from the Sanatorium of the Jewish Consumptives' Relief Society, Edgewater, Colo. The paper was based upon twenty cases of tuberculous empyema seen at the sanatorium. Fourteen showed bacilli resembling tubercle bacilli, two were negative, and in four there was no record of a bacteriologic examination. The process is clinically an extension to the pleura from the lung itself, usually by rupture. Dr. Duboff said that in the purulent effusion there are nearly always tubercle bacilli to be found. He thinks it is as common as in the sputum of advanced cases of pulmonary tuberculosis. Conditions which predispose to lung rupture predispose to empyema. The most potent cause in recent years has been artificial pneumothorax. These twenty cases occurred among nine hundred and two patients. Forty-eight of these were treated with artificial pneumothorax. Ten occurred during the course of induced pneumothorax with the symptoms of lung rupture. The onset of empyema is generally marked by stabbing pains in the side, dyspnea and rise in temperature, with an

improvement in the symptoms when the effusion develops. The fever drops and many times there is no fever for months, with, as a rule, no marked dyspnea. The empyema may be latent for years, but eventually it will seek an exit. Dr. Duboff said four of their cases ruptured into the bronchus, while six broke through the chest wall. After fistulae develop fever is common. The prognosis is bad in spite of the improvement of the pulmonary condition and absence of symptoms for months. The diagnosis is made by means of the history, physical signs, x-ray, and later by aspiration with microscopic study of the exudate. The x-ray should be taken as a vertical chest plate. A level layer of fluid with a history indicative of lung rupture should suggest pus later. The treatment may be one of four courses: first, leaving the patient alone; second, aspiration; third, aspiration followed by injection of air; fourth, surgical intervention. He said none of their cases was cured, and they have found, provided there were no pressure symptoms, that the patients were more comfortable and free from toxemia when left alone. The symptoms indicating aspiration are dyspnea, pain and an irritable cough. When aspiration is done it should be done with the finest needle possible to evacuate the pus, in order to avoid fistula formation. Drs. Arnold Minnig, H. J. Carper, T. E. Beyer, Samuel Swezey, Morris Printz, M. I. Marshak and C. T. Burnett entered into the discussion, which was general and of interest. Dr. Swezey said it was his experience rarely to find the tubercle bacillus in the purulent effusion. Dr. Marshak emphasized the fact that these patients were better left alone unless symptoms intervene to oblige some other measure. The indications are cough, dyspnea and rapid pulse.

MARY R. STRATTON,
Reporter.

The regular meeting of the **Medical Society of the City and County of Denver** was held November 18, 1919, with President Jackson in the chair.

Drs. George B. Lewis and D. W. Van Gilder were elected to membership in the society.

Dr. C. E. Edson spoke on the proposed meeting of the Medical History Section of the County Society.

Dr. S. B. Childs read the report of the Entertainment Committee for the state convention of October 7, 8 and 9, which showed a balance of \$1,068.61 after deducting all expenses. Of this, \$1,000 will be turned over to the Endowment Fund of the society for the benefit of the library.

The scientific program opened with "Postgraduate Study", by Dr. J. N. Hall. He said that the character of many of the New York and Chicago postgraduate schools was questionable because of the often necessary financial connection in acquiring professorships, such as the purchase of stock, etc. Not enough postgraduate work is done in Colorado. The value of such work was well demonstrated in the army, when at various camps and hospitals postgraduate schools were established primarily for the purpose of improving methods of diagnosis. It was shown that at the hospitals where most postgraduate work was done the admission rates were the highest and the mortality rates the lowest, and vice versa. The Colorado State Society has suggested the inauguration of postgraduate work here, following the suggestion at Atlantic City last June. The idea is to have six groups of four men visit various sections or societies in each district in rotation once a month, giving especial attention to diag-

nosis. The discussion was continued by Drs. Jackson and Edson and Colonel Willis.

Dr. C. D. Spivak read a long paper on "Dietetic Régime for the Tuberculous". He emphasized the value of rest in all diseases of the stomach and intestines, and said that the diet of the tuberculous should be the same as that of the healthy person at rest, and that it was often advisable to omit food rather than to crowd it. Dr. G. W. Holden, in opening the discussion, concurred as to the value of not forcing feeding, stating that once, for experiment, he divided all the patients at the sanitarium for three months into two groups, giving those of one group three meals a day and those of the other six meals a day. The former class was very much ahead of the latter.

R. G. PACKARD, Reporter pro tem.

EL PASO COUNTY.

The November meeting of the **El Paso County Medical Society** was held in the Elks' Home and was well attended.

The members of the society heard a most interesting paper by Dr. Hart entitled, "The First Ten Years of the El Paso County Medical Society". Dr. Hart was one of the first members of this society and one of the incorporators.

Dr. McKinnie's paper was entitled, "Plaster of Paris Splints". This was discussed by Drs. Hartwell, Bortree, Mayhew, Campbell and Goodloe.

The business part of the meeting was taken up with discussions on the examination of school children. Dr. G. B. Webb, chairman of this committee, suggested that all boys at the high school should be examined to determine their fitness to take part in athletics. It was also suggested that the doctors cooperate with the school nurses.

A letter from Dr. R. F. Rohlfing, a member of this society who has moved to San Dimas, Cal., was read by the secretary.

C. E. RICHMOND,
Secretary.

Book Reviews

The Don Quixote of Psychiatry. By Victor Robinson, Ph.C., M.D. Octavo of 339 pages with 30 illustrations. Published by the New York Historico-Medical Press, New York City, 1919.

This interesting book is a biography of the neuro-psychiatrist, Shobal Vail Clevenger. It presents him as visionary and versatile, as Jack-of-all-professions and nearly a master in psychiatry. He failed to become a great master only through "that versatility which is the curse of genius".

Clevenger's life is presented as largely a fight against political corruption. After his initial career as a soldier, he becomes an engineer and government surveyor. As a government surveyor he meets corruption at Washington, and as a result he abandons his profession for that of medicine, in which he hopes to meet honest men.

As a young doctor he is offered a position as special pathologist to the Cook County Insane Asylum at Dunning. He is mortified to receive his appointment in a saloon at the hands of King Mike, political boss of Chicago. At Dunning he finds that the hospital is a political plaything and that the medical staff is there only on sufferance.

He endeavors to account for the cream that disappears from the patients' limpid milk and succeeds in tracing it to King Mike's kennels.

He asks for ten dollars' worth of sulphonal for

the drug room, but the appropriation is refused. Instead, the warden orders fifteen hundred dollars' worth of sundry drugs, consisting of whisky, wine and cigars. These are used in politicians' revels at the hospital.

Such things aroused the ire of Clevenger, and upon the occasion of an election he writes "An Appeal to Physicians" in the Chicago Inter-Ocean and pleads with them to oust the political gang. That night a bullet crashes through his room at the hospital and he takes the hint and departs.

After several years of private practice he accepts the position of superintendent of the Insane Hospital at Kankakee. Here politicians harass him for appointments for their friends and he is again in open conflict with corruption. Corruption wins and he is removed from the appointment.

He spends the succeeding years of his life as practicing physician, teacher, essayist, author and newspaper editor. As his biographer tells us, he dabbled in too many things, and, though he became a good psychiatrist, he never was a great one.

He was, however, Chicago's pioneer anti-boodler, and his biographer states that in writing the story of Clevenger's life he has written the story of Chicago's shame. He writes the story because flaming evils still exist where politicians serve the sick.

The Don Quixote of Psychiatry is a delightful little book and is deserving of a more attractive title.

C. S. B.

What We Know About Cancer. A Handbook for the Medical Profession. Prepared by a committee of the American Society for the Control of Cancer, American Medical Association Press, Chicago, 1918.

The American Society for the Control of Cancer has been in existence and working effectively for a number of years. The sole object of the society, at present at least, is the "dissemination of facts in regard to cancer, to the end that its mortality may be reduced by a wider knowledge of the disease".

It is not possible here to abstract this pamphlet which is already so condensed. The general facts concerning cancer are outlined and then each important type and site of cancer is taken up in detail, and the forms, symptoms, standard treatment and results to be expected are outlined for each type.

The chief point we would make here is that if every medical man would study and seriously apply the teaching in this pamphlet, which he can read in an hour, the question of delay in cancer would be solved in so far as it is referable to the medical profession. The ultimate possible good obtainable from the widespread dissemination of this pamphlet is so great that we would urge every possible means to get it into the hands of as many medical men of all classes as possible. It can be had from the American Medical Association, 535 North Dearborn Street, Chicago, for ten cents.

The Medical Clinics of North America. Volume III, No. 1. (The Chicago Number, July, 1919.) Octavo of 277 pages, 59 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Published bi-monthly. Price, per year: Paper, \$10.00; cloth, \$14.00.

The Chicago number is opened by Dr. Isaac A. Abt, who discusses the prognosis of disease in infancy and childhood in a very able manner. He also presents an interesting case of Hanot's Cir-

rhosis in a 2-year-old child. Dr. Frederick Tice's clinic consists of two interesting cases. An unusually valuable contribution by Dr. Julius H. Hess on "Radiographic Differential Diagnosis of Bone Affections in Infancy and Childhood" follows. This subject is fully discussed and generously illustrated. Dr. Milton M. Portis presents an unusual case of carcinomatous metastases in bones secondary to carcinoma of the stomach. He states that if a tumor is found to be secondary then always investigate the stomach as one of the sources of trouble. A very remarkable benefit of carcinoma of the esophagus treated by radium is deserving of attention. Dr. Clifford G. Grulee gives a detailed discussion of "Pyelocystitis in Infancy". "Pulmonary Tuberculosis in Association with Other Diseases in the General Hospital" is ably handled by Dr. Solomon Strouse. This is followed by an exceptionally interesting clinic by Dr. Charles Williamson, who offers us some valuable information upon the treatment of acute and chronic gout. Dr. Peter Bassoe follows with an exhaustive contribution on the "Swift-Ellis Treatment of Paretic Dementia". The subject is presented in a most practical and admirable manner. A practical clinic dealing with the treatment of constipation by Dr. W. D. Sansum follows. "Cardiac Arrhythmias" receives a thorough consideration by Dr. James G. Carr. This is followed by a brilliant discussion and case report of Hodgkin's Disease by Dr. Arthur F. Byfield. Some interesting ear cases are presented by Dr. Robert Sonnenschein. An illustrated clinic by Dr. Walter W. Hamburger on "Irregular Placement and Fixation of the Large Bowel" is most enlightening. Dr. Frank Wright closes this excellent number with a consideration of the abnormal loss of fluid in contrast with edema.

J. L. M.

Quarterly Medical Clinics, Vol. I, No. 2. January-April, 1919. By Frank Smithies, M.D., F.A.C.P. Published by Medicine and Surgery Publishing Company, St. Louis. Paper: Single, \$1.50; year, \$5.00. Cloth: Single, \$2.25; year, \$8.00.

This number of the Quarterly Medical Clinics contains thirteen interesting cases such as the general practitioner is apt to encounter in his daily routine, thereby covering a fairly wide range of diseases. Of special interest are the thorough discussions, with detailed notes on clinical and laboratory procedures. There is a great deal to be learned from the masterly presentations of Dr. Smithies.

J. L. M.

NEW AND NONOFFICIAL REMEDIES.

During November the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies:

Nonproprietary Articles: Neocinchophen.

Calco Chemical Company: Neocinchophen-Calco.

Hollister-Wilson Laboratory: Pituitary Solution—Hollister-Wilson; Ampules Pituitary Solution—Hollister-Wilson.

Pure Gluten Food, Co.: Hoyt's Gluten Special Flour.

Van Dyk & Company: Benzyl Benzoate for Therapeutic Use—Van Dyk & Co.

Winthrop Chemical Co.: Luminal; Luminal Sodium; Luminal Tablets.

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